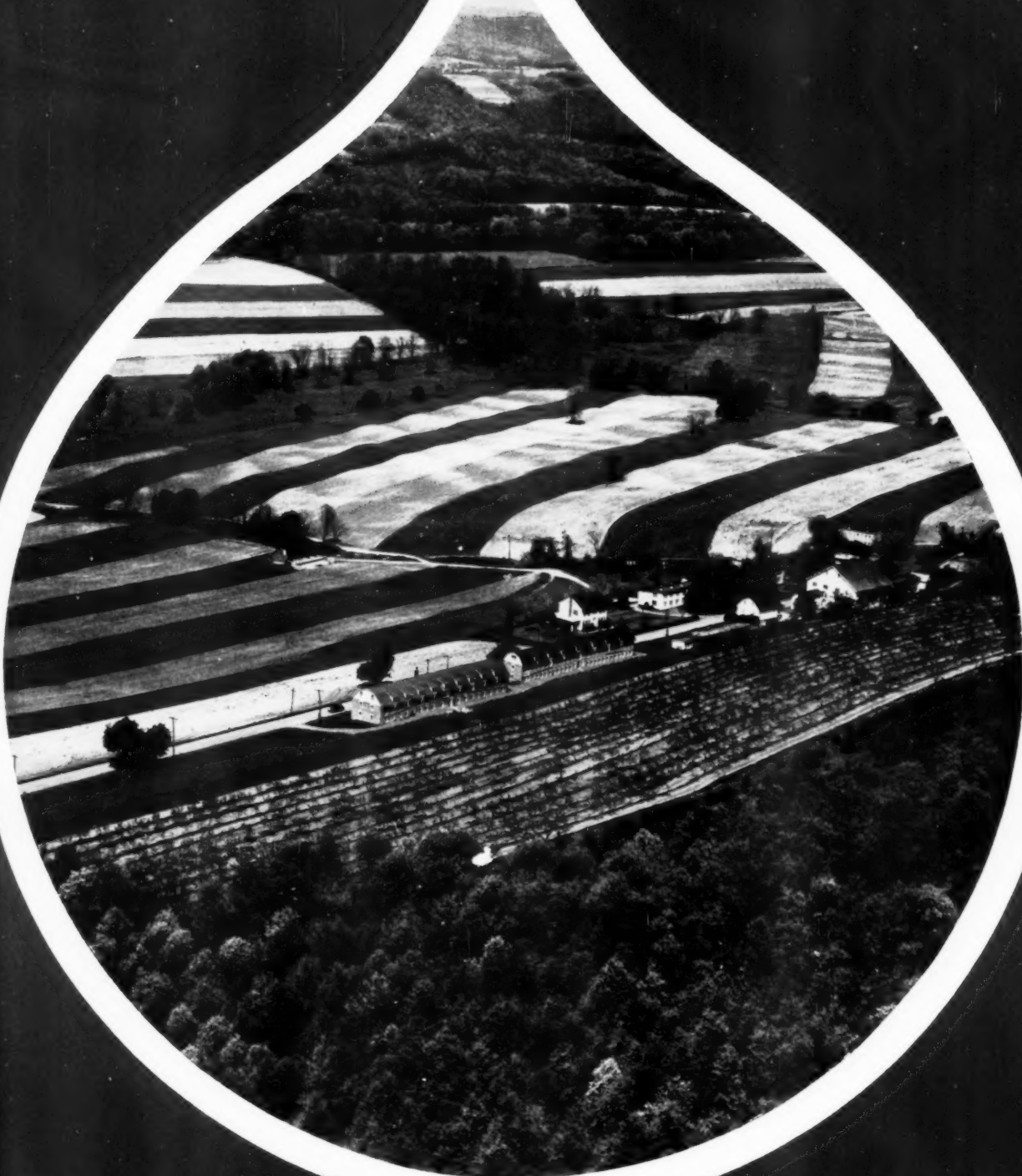


American

FORESTS

JANUARY 1956

50 CENTS



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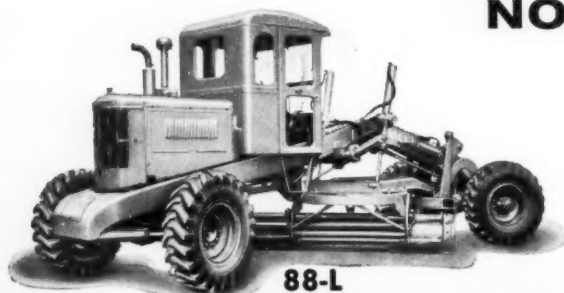
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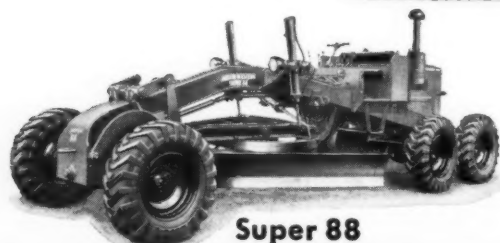
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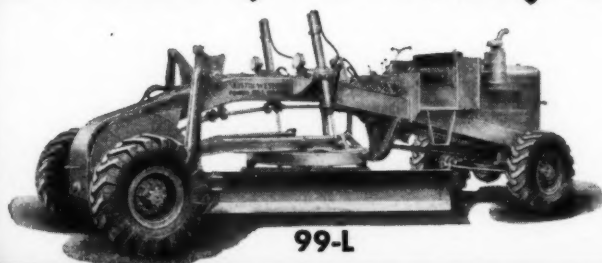
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The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Cut Boost Urged on Federal Forests

FOLLOWING a report on the recent hearings in northwestern states before the Joint House and Senate Committee on Federal Timber, (see story page 34) AFA's executive committee last month instructed the staff that support of increased appropriations for the Forest Service the coming year should be predicated on:

1) Assurance by the Forest Service that it will sell the full allowable cut on each national forest and that it will not run behind in many regions.

2) Assurance by the Forest Service that it will reinstitute and carry forward their normal Forest Service inventory on a complete basis for each decade.

"I think we are all agreed that private land subject to overcutting and federal land under-cut is a bad combination for a healthy timber economy," President Don P. Johnston said.

Senator Morse, in stressing that we must develop methods of increasing good management on private and public lands without compromising in any way our system of free competition and business enterprise, told the committee that our big concern today "is how to increase the harvest of federal timber on a sustained yield basis."

"I certainly haven't all the answers", Senator Morse said, "but I have been listening to informed people on our timber problems and from these I have received what I believe are suggestions of great importance. They are:

"1) Access roads are the lifeline of our federal timber supply and foremost among the suggestions for the improvement of our federal forest management and timber sales policies is the proposal that our forest access roads program be expanded and improved."

"2) We are greatly in need of up-to-date inventories. I understand that if we had inventories that truly reflect the volume of timber available for harvesting, allowable cuts might be increased almost 50 percent in the Douglasfir area and perhaps 10 to 20 percent in the pine country."

"3) Federal foresters are paid much less than the current industry rate of pay and they and their families are poorly housed. . . . We should make sure they can pay their people properly and house them decently. . . ."

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Devoto

was an artist

By STEWART HOLBROOK



THE man who wrote *The Year of Decision* was first of all an artist with a full measure of poetry in his soul. It is one of the really great American books of this century. That it is also sound history is of secondary importance in placing Bernard DeVoto among distinguished men of letters. Other historians knew and know as much about the American story as did Mr. DeVoto. Yet few dead or living could illuminate their knowledge with quite his brilliance. He wrote about the western frontier to be realized as personal experience.

The same brilliance attended the other two volumes in his magnificent trilogy of the winning of the West, which were published as *Across the Wide Missouri* (the Pulitzer Prize winner) and *The Course of Empire*. It is also present in his fine if lesser-known work entitled *Mark Twain's America*. It flashes here and there in his magazine pieces in *Harper's*. The man, in short, wrote like an angel.

There was nothing angelic about Benny DeVoto. He thoroughly enjoyed being known as God's Angry Man. He fed his irascibility well and nursed it with care. It was one of his many charms to his friends; and it served to fashion the detonating caps of his prose. He was a genuine maverick, not a calculated one. It was the way he was made.

His favorite hates and loathings might soften, even pass, but for the moment they were held as true dog-

ma and he aired them with enthusiasm. He loved the headlong charge. No quarter. Arbitration was not of his nature. In the copy he sent me of *The Course of Empire* he wrote: "On the Day of Armageddon." I knew what he meant; he expected, and doubtless hoped, that the book would be attacked by academic historians. He would be ready for them—and he was.

In my copy of *The Literary Fal-lacy* he wrote "as one maverick to another, and damn the academy." On the dedicatory page of *Mark Twain's America* is printed a sort of sub-title, describing the work as "An Essay in the *Correction of Ideas*." The italics here are mine. The implications are clear.

Like Mencken he liked to attack. Like Mencken, too, he was willing to take on any antagonist. He tilted with the American Medical Association, the FBI, the book censors of Massachusetts, the State of Maine, all Unreconstructed Southerners, and assorted departments of the United States government.

He was never without a Cause, one of which was to rescue the martini cocktail from incompetent hands and restore what he said was the perfect balance of its primitive youth. He was immensely pleased

when his martini essay was published as a booklet and enjoyed a wide sale.

What serious writer save DeVoto would devote twenty solid hours to sitting before a television set to "prove" that the medium was given to "a vast deal of manufactured falsity" that was due in large part to "the huckster mind, which like a diseased pancreas converts everything to sugar"?

In lighter moments he liked to refresh himself with devastating attacks on whatever piece of current phoniness caught his attention. If you want to read DeVoto at his artistically venomous best, then turn to "Ninety-Day Venus" in the recent collection of his magazine essays published as *The Easy Chair*. I can think of no more salutary and amusing piece of journalism.

Late in his short life he became interested in conservation. I have little knowledge of grazing lands and water power, and read his essays on these subjects only for the sheer joy of reading DeVoto the artist. His forays into the timber, however, struck me as naive. I often told him so, and suggested that his sweeping criticisms of the current lumber industry were as dated as the old-fogey

(Turn to page 58)

Washington



Lookout

By ALBERT G. HALL

FLOOD PREVENTION, RATHER THAN FLOOD CONTROL, and emphasis on action were the keynotes of the Second National Watershed Congress, held in Washington, D.C.'s Hotel Statler, December 5 and 6. Water and soil conservationists, enthusiastic persons, are quite impatient with the lack of progress in federal programs. This impatience was dramatically expressed by many of the participants in the watershed congress. It was pointed out, for example, that not one of the eleven watershed projects authorized under the Flood Control Act of 1944 has yet been completed. Completion ranges from 5 to 50 percent. Of the 65 watershed pilot projects authorized in 1953, 58 are still active, but only about one-third of the project work has been completed.

UNDER THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT of 1954 (Public Law 566, 83rd Congress) no actual field work has taken place. The Department of Agriculture has approved about 125 watersheds for federal planning assistance in co-operation with local agencies. Another 150 applications are being investigated by Soil Conservation Service field offices. There are more than 1600 applications pending before various agencies of state governments prior to submission to the Department of Agriculture. Twenty-two states have enacted legislation enabling local units of government to participate in the program. The progress has all been toward getting ready to act — not a shovel of dirt has been moved on P.L. 566 projects.

CHECKS AND BALANCES WRITTEN INTO PUBLIC LAW 566 to assure sound planning and avoidance of "pork barrel" projects are proving cumbersome — too cumbersome for progress, the watershed congress delegates reported. Lack of clear-cut policies as to priorities to govern federal participation in local watershed work further slows the program. "How will the government decide which applications to act on each year, and which to delay? Some well-publicized and objective formula for establishing priorities, incorporating standards of urgency and acceptability appears essential. Without it, we impose an improper and unfair burden on the program administrators. Either they are exposed to political pressures without defense, or they are asked to make independent and arbitrary judgments. Neither of the latter conditions will serve watershed progress in the long run." This statement by a committee on federal responsibilities points up the chief criticism of the various federal programs — a need for a national soil and water policy.

LEGISLATIVE ACTION TO BE SOUGHT THIS YEAR by at least some of the sponsoring organizations of the watershed congress include: Amendment and broadening of P.L. 566 to increase the water storage limitations — now placed at 5,000 acre-feet. This was recommended by the Department of Agriculture's new Soil and Water Conservation Advisory Committee. Changes in the federal-local sharing bases are proposed, so that farmers may obtain credit for conservation work done prior to application for federal assistance under the Act, and to bring greater consistency into the federal cost sharing pattern in the various federal programs.

A BASIC PROBLEM IN WATERSHED IMPROVEMENT was reported to be the lack of adequate participation of town and city populations in the planning, decisions, and cost sharing. The watershed congress itself was evidence of this. Essentially, the participants were the so-called conservation groups, and although the Chamber of Commerce of the United States and the National Association of Manufacturers were among the sponsors and were members of reporting

committees, very few industrialists or downstream city representatives were present. Watershed protection and flood prevention, while performed upstream, is primarily the concern of downstream populations. Ohio's Muskingum Watershed Conservancy District, an outstanding example of a local solution to flood problems, stemmed from a flood survey financed by the people of Zanesville — one of the valley cities seriously affected by the disastrous flood of 1913.

SHERMAN ADAMS, THE ASSISTANT TO THE PRESIDENT OF THE UNITED STATES, pointed out to the 300-plus members of the watershed congress the importance of the watershed program to the water user. "What we do, for instance, in making available a sufficient supply of water determines the location of industries and their supporting populations. To many industries the availability of water is more important than even their proximity to raw materials or to markets. Of even more fundamental consideration is the fact that water is the determinant of the habitability of much of America."

THE CONCENTRATION OF THE CONTROL OF WATER in the federal government ultimately means the control of the land and consequently of the whole economy, Mr. Adams stated. "On the other hand," he said, "there are certain responsibilities from which the federal government cannot escape. The impact of shortages on increasing numbers of people, the complexity of interstate and interregional conflicts, national urgency for expanding beneficial uses — all these demand, not control, but attention and action and coordination by federal agencies." He also indicated that a national water policy is in the making and that it may be presented to the U.S. Congress in its 1956 session.

WHILE THE PRINCIPAL EMPHASIS OF THE WATERSHED CONGRESS was on the agricultural phases of the watershed problems, more attention was given this year to the place of forests, both public and private in the total watershed picture. The need for protection from forest fire was stressed by California's DeWitt Nelson and by H. G. Wilm of the New York College of Forestry. Another shift of emphasis, as contrasted with the First National Watershed Congress was consideration of how to organize local groups, the type of local government units that need to be established, the methods of financing, and the procedures in planning. Last year, the group emphasized the problem; this year, solutions were being sought. Last year, the Department of Agriculture was without a handbook or a procedural plan; this year, the Soil Conservation Service program was well outlined. Last year, Public Law 566 — a new and untried legislative authority — was looked upon as the answer to watershed problems; this year, it was well-recognized that P.L. 566 was only one of a number of federal-state-local programs available.

THE NEED FOR BASIC DATA ON SOILS, HYDROLOGY AND ENGINEERING was mentioned by a number of participants. It is one thing to recognize a problem and to approach its solution with enthusiasm, but the end result of a watershed program is dependent more upon the cold, undramatic facts developed by competent scientists. While the Second National Watershed Congress was less exciting and less dramatic than the first, there was considerable evidence that the movement has "shaken down" to a more studied approach.

THE NEXT OR THIRD NATIONAL WATERSHED CONGRESS may be held in the West or Mid-West where some of the progress already made by local watershed groups may be examined on the ground. Thus, we see a transition taking place among the leaders of the watershed movement that is somewhat akin to that which has taken place in forestry. Early forestry conferences were designed to stimulate a desire to do something about a problem — even before any major portion of the problem was known or before well-considered solutions were at hand; today, most forestry programs are action programs. The watershed group has started to move rapidly in the direction of fact-finding and action.

ANOTHER PIECE OF FEDERAL LEGISLATION MAY BE ADDED TO THE TOOLS of the watershed organizations by the end of this year. The Small Projects bill passed by both the House and the Senate in slightly differing versions and now in conference, would expand the provisions of the Reclamation Act to authorize federal financial assistance on a nation-wide basis for irrigation and flood control. As proposed, the reclamation work in the West would remain under the jurisdiction of the Department of the Interior, while the added authority for reclamation work in the East would be given to the Department of Agriculture.

EDITORIAL

Remaking the Face of America

"A watershed is a living thing," Francis C. Lindsey, of Loomis, California, told the Second National Watershed Congress last month in Washington. "The more it is cared for the more it will produce. The more we do to protect it the more it will return to us in the good life this nation is supposed to be enjoying. A watershed is forest and fields and wildlife and people. And watershed plans, if they are to succeed, must recognize this."

It is the underlying beauty of thought in this "living thing" theme as it continues to recur at these watershed congresses—this concept of a unit in which man and nature exist in harmony—that grips the imagination and whets one's interest. It conjures up the picture of a conservation Utopia where governments and people, downstream engineers and soil experts, foresters and wildlife experts, pollution engineers and hydrologists, recreationists and wilderness enthusiasts are all working together in partnership from one blueprint toward a common goal. That goal, of course, is land and water management with resources abundance on all watersheds—which means every acre of our country.

The second congress did not come close to outlining any such blueprint nor did it even attempt to do so. Our watershed "Erehwon" becomes "nowhere" in a hurry when we stack this big concept against the actual level of thinking at the congress and one comes down to reality with a bump. Just the same, this second town meeting on water made gains. There are encouraging trends. The first congress was strictly a "Public Law 566" meeting with many of the delegates arriving and going home with a pork barrel gleam in their eyes despite one of the bluntest statements on the subject by Secretary Benson ever served up to a predominately rural audience.

The second Congress, on the other hand, was less inclined to regard 566 as a "cure all." It will help, most delegates agreed, but the burden of the effort must be on the states, the local communities and most of all the landowners. Delegates to the second congress also exhibited a new respect for the very immensity of the job they are undertaking. There was new emphasis on the importance of education, the formation of appropriate citizens' groups, careful planning and real missionary work *before* rather than *after* government approval of their programs. Still weak in urban attendance, the second congress, nevertheless, was broader in scope with more po-

tential cooperators taking part. Perhaps even more important, the delegates now realize that a wide gulf exists between the formulation of the over-all watershed concept and its actual application.

One thing seems sure. No federal government or combination of state governments can possibly finance any such project as is envisioned here. It's too big for that unless we want to risk putting the American way of life on the block. Compared to the watershed approach, cost of public works programs up to this time would be mere penny ante. When one reflects that pollution control alone would cost in the neighborhood of 750 million dollars a year some realization of the total cost entailed begins to appear in true focus. And in eliminating the piecemeal approach to the job as ineffective, the plan, in the final analysis would cut across every segment of our society and has a direct bearing on our very way of life. Obviously, this is a task that would require the full support, creative genius and ingenuity of the entire American public.

It boils down, Gov. Sherman Adams told the meeting, to "What, then, do you want your country to become?" In nailing down some of the deeper implications inherent in the proposition, The Assistant to the President said, "In the answer to this question I think you will find your real purpose and the goals you seek to achieve. Can you resolve your own debates and can you state clearly what you believe the best course your country should pursue in the varieties of perplexing questions which you have for consideration? Are you ingenious enough to find the solutions to human needs and still cherish and maintain the freedom and the human rights that the designers of our Constitution intended to be imperishable?"

After wishing the congress luck in its mission, Gov. Adams returned to the White House leaving the delegates to reflect that it is no little thing, this business of remaking the face of a nation. In facing up to reality and the very immensity of their undertaking we hope they do not despair. Their task is of epic proportions; but in this package concept for watersheds they are armed with a high voltage idea, perhaps the most significant concept yet produced by our century. If it can be so applied that it will not infringe on human rights and impair our way of life, this concept could be the tool for the final achievement of sound resources management, the means by which our country could be converted into a garden.

On land suitable for woodland use
farmers can harvest a timber crop



Black oak log, 21" diameter, being
measured on a Springfield, Mo. farm



Delaware farmer cuts loblolly trees
into lengths with power saw on farm



Is Farm Forestry

Pennsylvania farmer,
who realizes value of
timber crop, skidding
log through woodland



Both foresters and agricultural workers must assume the responsibility of teaching farmers that wood is an agricultural commodity and can contribute a fair share to the farm income

By JOHN F. PRESTON

TO any careful student of the farm forestry program as now conducted in the Department of Agriculture and in the states, it is evident that something must be wrong. There are not enough farmers growing wood as a farm crop. There are too few farmers making their woodlands contribute a fair share of the farm income.

I believe there is a fundamental weakness in our approach. Like the foolish man of the parable in the Sermon on the Mount who built his house on the sand, we are trying to build our farm forestry structure without a proper foundation. The foundation that is lacking is the acceptance by farmers of forestry as an agricultural activity; of wood as an agricultural commodity; and the wood crop as one that a farmer can and should grow himself.

How weak is our foundation? Listen to the answers that five out of ten farmers in one locality made to the following simple question:

"DO YOU CONSIDER THE GROWING OF A WOOD CROP A PART OF YOUR FARM BUSINESS?"

1. "We have a large dairy operation and we just happen to have a lot of woods. The best offer usually gets our timber."
2. "I have never considered the woods as a crop; you cut it once and it's gone forever."
3. "I have never sold anything from my woods in 40 years of ownership, therefore hardly consider the woods as a crop."
4. "We had our timber cut several years ago and suppose something will be cut again some day but that isn't a crop like hay that we harvest every year."
5. "No, my timber is quite similar to a coal mine, once it's cut, it's gone."

This attitude is not peculiar to farmers. A lack of understanding of the relation of forestry to farming would be disclosed if the same question were put to many of our agricultural teachers and technicians.

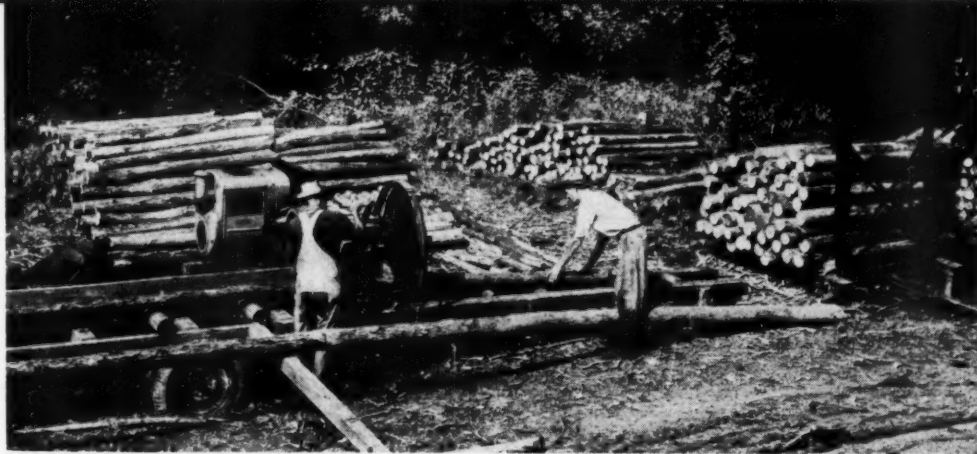
This, I think, is one of the reasons our foundation is weak. Foresters themselves have not accepted this fundamental fact about farm forestry. Too many of them think in

terms of silviculture, selective cutting, thinning, liberation cutting and other individual technical practices. Demonstration plots are established to illustrate the kinds of management farmers should follow—plots that are handled on the basis of 5 to 10-year cutting cycles. In trying to teach forestry to farmers, no distinction is made between commercial forestry and growing wood as a farm crop. There is a difference in the way forestry should be taught to the farmer who is willing and can grow wood as a farm crop and to the man who is interested only in commercial forestry, in growing wood as an outside enterprise.

There are four essentials to growing wood as a farm crop on most farms:

1. The farmer must be the manager of his own woods. (He may seek advice and technical help, but he remains the manager of his own woods.)
2. Cut and sell processed products. (Stumpage sales must be the exception rather than the rule.)
3. Cut wood products every year. (Not always sawlogs, not always

stry on the Wrong Trail?



Trees thinned in woodland area are worked into variable lengths by a portable saw mill

products to use or sell—annual cutting keeps the farmer familiar with his woods.)

4. Use farm labor insofar as possible for woods work. (This maintains an experienced labor force.)

None of these call for any knowledge of specialized forestry techniques, the things foresters have been trying to teach farmers for years. The farmer can manage a wood crop with little or no technical knowledge of forestry practices just as he can manage a pasture or livestock, grain or fruit crop. They will do a lot better if they follow the experts' advice for handling each crop. The concept of wood as a farm crop is what both farmers and foresters must accept before there is any hope of permanently establishing forestry as part of the agricultural program.

When accepted it will put the wood crop on the same basis as most other farm crops. That means the



Michigan basket factory, an ideal market for timber from farm woodlands, exhibits a supply of logs which have come from farms in area

product that is sold *acquires value through farm labor* that goes into its making. Actually, commercial forestry (stumpage sales) is something foreign to farm economy and can never become an established part of the farm business. Stumpage in most cases is made up only of taxes and interest. Of course, with

future intensive management, stumpage will include many labor and management items that are not present now. Taxes and interest are the essential elements in rent; a farmer who sells stumpage is merely collecting the rent for his woodland and the farmer who follows that policy on other parts of his farm would soon go broke.

Wood as a farm crop puts the farmer on his own. He grows his own crop of wood with such technical help as he can get but the absence of technical assistance should not deter him from growing a wood crop. He is ready to begin once he decides to grow wood as one of his crops. Technical forestry help properly comes after wood as a crop is taken into the agricultural family. The forester may help in the development and the perfection of that wood crop.

Getting the farmer to accept the idea, the concept of wood as a farm crop, is a job for all people interested in agriculture. It belongs to the agricultural schools, the agricultural leaders, the farm journals, the foresters and the farmers themselves; in fact it is the job of everybody connected with agriculture directly or indirectly. To get farmers to grow more and better wood crops, we should first be concerned with this basic job; the technical practices are a secondary matter. Of course, all farmers will not grow wood as a farm crop. Some farmers will prefer, or for various reasons they may be forced to be content with, commercial forestry. These, however, I believe are the exception, not the rule. They should become the clients of the consulting foresters.

Not very much has been done so far about having wood accepted as a farm crop. To get wood grown as a farm crop, accepted as an ideal, a concept, a principle, we must get the

This peeled and tight piling on the deck and ready for shipment came from a Washington farm woodland whose owner has learned that timber is a crop



wood crop on the same basis as the corn or the wheat or the cotton or the livestock crop. It must become a part of the symbolism of agriculture. When wood as a farm crop finally becomes something taken for granted, a premise, a truism, the symbolism will have been established. In arithmetic we accept the fact that 2 plus 2 equals 4, and that 2 times 4 equals 8. We learn it and we accept it. We can't explain why 2 plus 2 equals 4; it just does. Of course, the analogy is not quite true because we can explain why wood should be a farm crop, but the premise that wood is an appropriate farm crop and should be handled as are other farm crops, should be accepted as part of agricultural teaching. Agricultural teaching emphasizes good land use and soil conservation, which means crops suited to the capability of the land. Along with these concepts is the principle that every acre of the farm should carry its part of the job of producing the farm income.

Perhaps such a principle is accepted in theory, even now, I am not sure; but certainly in practice it is not preached very loudly when it concerns the woods. Many economic studies of farms simply ignore the wood-producing capacity of the soil, and do not evaluate existing farm woods as a farm crop. Ideals, principles, theories, and basic truths of farm economics, even when related to the farm woodlands, are not exclusively the domain of the foresters. Unfortunately, the foresters have tried to carry the whole farm forestry load—they have failed to recognize that other technicians, soil scientists, agronomists, biologists, engineers and others had anything to contribute. I think that is another reason why in the past 50 years farm forestry has not made satisfactory progress. The job of putting over *wood as a farm crop* is one of building the foundation for a farm forestry program and it belongs to all who presume to guide farmers on how best to make a living. It is time that foresters acknowledge this truth and call upon the fraternity of agriculturists to help them establish a proper starting point for a farm forestry program. It is physically impossible for the foresters to build the foundation without help, even if they had the knowledge and ability to do so. There are too few of them, and always will be, in comparison to the millions of farmers to whom the message must be given.

The fundamental job in farm for-



Piling from a California farm woodland is being loaded on truck for transportation to Naval Supply Depot, Oakland for construction work

estry is an agricultural job. The acceptance of forestry as an agricultural activity and wood as a farm crop is an educational task which has never been tackled, and until it is accomplished we cannot expect to make much progress in farm forestry. To accomplish this foundation job in farm forestry there must be a combined effort of all agricultural workers. Let me repeat, the farmer does not require technical forestry knowledge to begin the practices involved in growing wood as a farm crop.

If you have doubts about farmers' abilities to grow wood crops, let's take a look at what is involved. Managing his own woods, processing products, annual cutting, using farm labor—not a thing there that says anything about forestry "know-how," or forestry techniques. Developing techniques for farmers' use must follow, and that constitutes the foresters' job in the farm forestry program—both public and private foresters, depending upon the nature and the size of the undertakings. If the farmer starts by using farm labor and cutting annually and making processed products, he is not likely to overcut. He soon will be curious to know how much he can cut and he will also want to know the best methods of cutting, so as to

produce more and better quality wood products; not until then is he ready for the forester's help. But he can go along for quite a while growing wood as a farm crop without a forester's advice, and he is not likely to do any serious damage to his woods.

One thing the farmer does need to acquire very shortly after he starts his wood-cropping program is a vision of what a well-managed woods should look like. He needs a mental picture of a good growing stock, a guide for him in his use of the marking axe. Foresters need to develop such guides for the farmer.

Another thing the foresters need to work at continuously is the marketing problem. They need to help develop tools and methods of harvesting, from two angles; get farmers to forget about stumpage sales and think first of marketing processed products, not stumpage. In view of the fact that for so many years foresters themselves have become pretty well saturated with the idea of stumpage sales, this will be a task of no small proportions. The other end of the same task, but a much less formidable undertaking, is to secure the cooperation of the buyers of wood products in accepting small lots of wood products at

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More members of The American Forestry Association asked for repeat coverage on second Watershed Congress than any similar conservation event all year. Is it headed in the right direction?

The answer is yes



The Watershed Congress

The third National Watershed Congress next year will move out to the land, probably to the Salt-Wahoo watershed project in Nebraska. The second congress was held in Washington last month with 37 states represented. It displayed a tendency to get down to grass roots too.

With New England states deluged by too much water and western and southern states suffering from not enough, interest in water and the watershed congress continued high. More members of The American Forestry Association asked for repeat coverage of the second congress than any similar conservation event all year.

How did the second congress stack up with the first? There was more emphasis on the importance of fact gathering, formation of watershed associations and increased action at the local level, less emphasis on Public Law 566 as the answer to all problems. The new law will help, delegates agreed. But the burden of

the effort must be on the states and local communities.

At the same time, delegates turned the heat on the administration to hurry up with its forthcoming national water policy. They also pointed to the fact that not one project under 566 has as yet been fully approved. Cut the red tape and speed up the action, the delegates urged.

"The watershed approach serves a significant purpose in that it brings control of the nation's water resources back to local level," W. Turner Walis, of Florida, told the delegates in reporting for a committee on Local Needs. "Keeping government close to the people is one of the most cherished ideals of the American democratic system."

The committee scored a tendency to over-emphasize Public Law 566. This is unfortunate, the committee said, because: 1) the watershed program of the SCS is only a partial answer to the problems involved; 2)

the program may develop along totally unanticipated lines; 3) the public is being led to believe that watershed development is another "pork barrel."

Criticism of the watershed program is mounting and centers around three major points, the committee said. These are: 1) No actual work has been started under P.L. 566; 2) Procedures are cumbersome. The program requires almost unanimous local approval, along with approval of other federal agencies interested in federal control; 3) The cost sharing provisions are comparatively inequitable, as compared to other federal programs.

Watershed associations are needed to bring divergent interests together in sane discussion of possible alternative solutions to water resource problems, the committee said. Formation of such groups was strongly recommended by this committee.

pressing these developments: (1) The introduction of legislation for the development of the Upper Colorado. While we have believed the Echo Park development an important part in a well-balanced development of the whole river, we have recognized the sincerity of the opposition of some of the constituent organizations of this body, as well as the public criticism. Nevertheless, we think that the Glen Canyon and other companion projects can proceed without Echo Park with sound justification. (2) The Frying Pan-Arkansas project has been recommended by this Administration, and we hope will receive favorable attention in the coming session of the Congress. (3) The small projects bill we hope will have the consideration of the Congress. This we believe should give attention to uniformity and provide maximum incentive to local action. (4) The Administration



"What do you want your country to become?" Sherman Adams asked the congress

Moves out to the Land

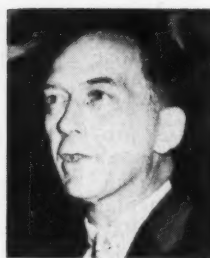
The administration to first recognize the importance of rehabilitating sick watersheds as a national problem was represented at the congress by Sherman Adams, The Assistant to the President. "... Water is the determinant of the habitability of much of America," Mr. Adams said. "How the control of available water resources is ultimately resolved draws the pattern of land use of great areas of our continent. It is self evident that the degree of control, and particularly where it lies, is a controversial question.

"The concentration of the control of water in the federal government ultimately means the control of the lands and consequently of the whole economy," Mr. Adams said. "On the other hand, there are certain responsibilities from which the Federal government ultimately cannot escape. The impact of shortages on increasing numbers of people, the complexity of interstate and inter-regional conflicts, national urgency for expanding beneficial uses—all these demand, not control, but attention and action and coordination by federal agencies."

In following this policy, Gov. Adams said the administration is



People and governments working in partnership can completely remake the face of watersheds on which they live. It was done in the Muskingum Valley's land of man-made lakes. It can be done on other watersheds.



Heard at the congress both from the floor and speakers rostrum were (l. to r.) Howard Miller, Kansas; Guy Crawford, Minnesota; Dr. H. N. Young, Virginia; Gordon Zimmerman, Washington; and Ted Silverwood, California

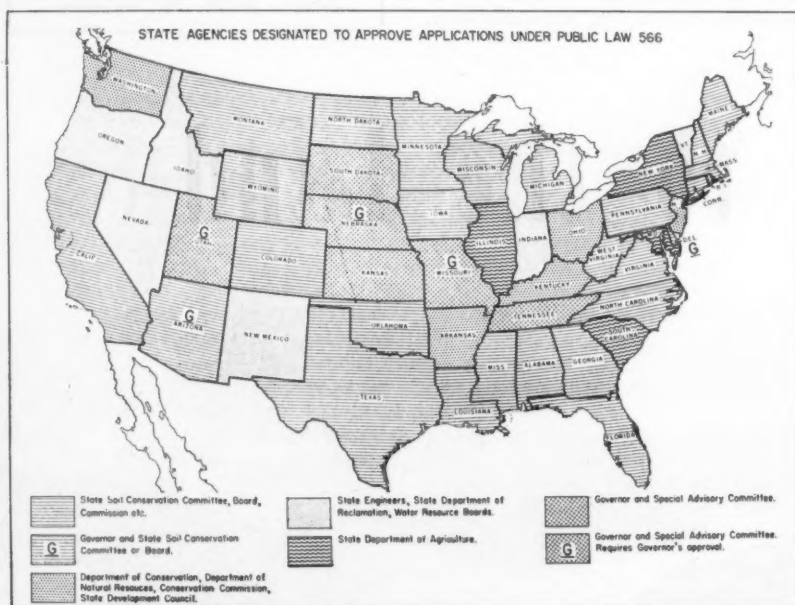
recommended the John Day Bill and we emphasized that here is represented a sound project for private participation. (5) We are glad that Priest Rapids now seems to be getting out of the woods; Rocky Reach seems to be taking shape, and Oxbow and Brownlee are moving ahead. The Ross Dam on Skagit and the

Hayfield Dam on the Cowlitz, and the Upper Baker River project all in one form or another are making progress. . . ."

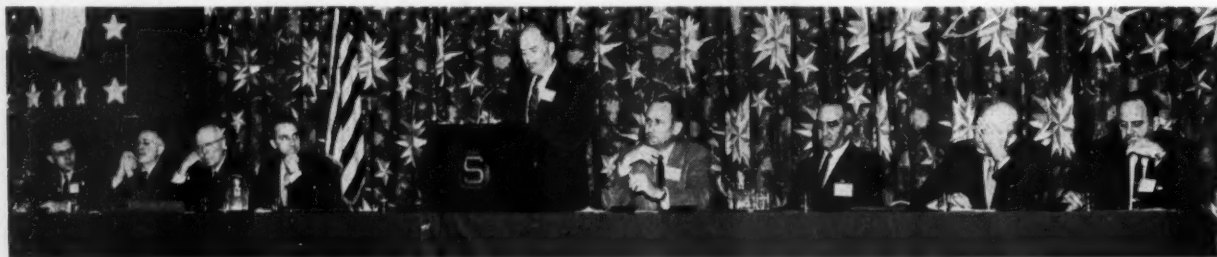
Will the congress broaden its horizon to include all groups with a stake in watershed rehabilitation or does it propose to function primarily as the Soil Conservation Districts

counterpart to the Rivers and Harbors Commission, some AFA members have asked? Representatives of Soil Conservation Districts again provided most of the steam at the second congress, but the general tone of the meeting was less critical of other groups and agencies, more conciliatory in tone. To the surprise of observers who attended the first session, the roof did not cave in when H. H. Bennett, former SCS chief, demanded to know "what is being done about cooperation with the Army Engineers." Big Hugh allowed that "you aren't going to get anywhere unless you obtain such cooperation."

How much of a gap exists between the thinking of the second congress and the water policy of The American Forestry Association as stated in its Program for Forestry, other members have asked? It is difficult to gauge the thinking of a convention that passes no resolutions but the answer would appear to be "less than formerly." The key hurdle here is the policy statement in the AFA programs urging "coordination of planning and application of watershed management and flood prevention measures on upstream forest, agricultural, and range lands with the construction of downstream flood



"We have proven in the West that these agencies can work together," Francis Lindsey, of California told congress. Some states have as many as 15 agencies working together on projects



Too much red tape has been built into the program under the Watershed Protection Act, the committee on federal responsibilities said. Lack of national policy on water was also scored





Dr. Harold Wilm (L.) represented forestry and Dr. Durward L. Allen wildlife at the congress

control and water power development projects."

The first congress showed scant interest in any such coordination and actually was hostile to the engineers. The second congress was less hostile in this respect and there were indications that it is now awaiting the promised national water policy for guidance on many problems pertaining to future coordination. Right now, there are certainly wide gaps to be plugged before any really effective coordination can be worked out with upstream forest managers, the soil experts and the downstream flood control specialists. H. G. Wilm, Dean of the New York College of Forestry, stressed "as small watershed programs develop, it impresses me that forest and range problems are being neglected and that there is a tendency to over-emphasize the role of upstream engineering especially small dams—and work on crop lands."

Downstream engineers, of course, weren't heard from at all; although it was interesting to note that Mr. Adams, in speaking of past conflicts between the Corps and the Bureau of Reclamation and the Agriculture Department, said this matter has already had attention and "these services are now getting their heads together." With a national water policy in the offing, this matter of "getting heads together" on the part of everyone concerned with watershed management is a matter of considerable importance in the opinion of many AFA members.

While the cooperative approach of the second watershed congress still leaves much to be desired in the opinion of some observers, progress was made, nevertheless, on the part of a group that was more representative and somewhat less provincial in its thinking. One AFA member who attended perhaps summed it up as well as anyone when he observed "this watershed congress has almost unlimited potential but any group has to walk before it can run."

Books

".. lot to know about water"

"THERE'S a lot to know about water," says Alfred Stefferud, editor of the 1955 Yearbook of Agriculture, *Water* (751 pp. Supt. Documents, Washington, D. C. \$2).

And so there is. Once again the U. S. Department of Agriculture has picked one subject important in the field of agriculture and has developed that subject into a book written by a large number of contributors. In this case the planners' stated aim was to "explain the nature, behavior, and conservation of water in agriculture." Purpose: to secure wider general understanding of the subject, in recognition of the serious water problems we now face and the definite assurance that the problems will increase as our population grows. It is significant that they did not set out to survey the broad problems and conflicts but rather to emphasize "the facts and basic principles that will help people in reaching the best decisions."

Water is the very essence of the world we live in, of our own bodies. How can the scope of such a subject be defined? To many readers there will probably be a fleeting, all inclusive glimpse of the relationship of man to the world's most plentiful and most vital substance in the meaningful sentences of one of the book's scientist-contributors:

"For all life water is necessary. For many uses it is convenient. In much of its functioning it is commonplace.

"But commonplace things often are the least appreciated and the hardest to understand. We pay great attention to the movement of water from place to place as vapor and clouds in the air, as rain on the soil, and then as streams back to the ocean. We know that water is the most abundant liquid on the earth. *Always we use or fight its tendency to find its own level.* (Italics mine.) In considering its uses and abundance and properties, however, we must keep in mind this main fact: Water is needed for life."

The editor, Yearbook committee, and the contributors have succeeded in producing a book that tells a connected story, brings the commonplace into fresh perspective, and weaves the subject of water through a description of the life processes about us. It therefore presents our proper use and management of this natural resource as an economic and social task of the first magnitude.

Take a commonplace or two. Ice floats. Why? The directional features of the hydrogen bonds in the molecule of water are different in the liquid and the solid state and as ice melts into water there is a nine percent increase in density. Actually it is a rather marvelous fact that we have here a substance that can normally be found as a gas, a liquid, and a solid when the temperature ranges necessary with most substances is considered. Yet who thinks much about it?

The bluegrass in the lawn does better when watered heavily at infrequent intervals than when wet down every day, though the total water be the same. A milk cow, on the other hand, does better when she can take frequent drinks than when she is compelled to gulp it all down once or twice a day.

The transpiration of plants, the passage of water out of the leaf surface, which in turn pulls water up from the roots, is triggered by the warm rays of the sun. When described by a plant physiologist the process takes on a significance that can be likened to the beating heart and pulsating arteries of a warm blooded animal.

Many and strange are the facts about the nature and behavior of water, how it subscribes to chemical and physical laws, how it enters into the life process of every living creature and plant. Knowledge of these things is, of course, necessary that we may understand how to best manage our water resources and the land resources that in turn have such a direct influence on the quality and availability of water.

by ARTHUR B. MEYER

Why Not Timber Cooperatives in the South?

By HAROLD W. HICKS

IT SEEMS quite certain that the timber resources of the Nation and the South are still in great need of conservation measures even though recent reports indicate growth has overtaken drain. The South is the potential source of the Nation's timber, due to the species which are native here and because of the adaptable climate and soil, which together, produce the fastest growing trees in the United States. But because of overcutting, waste, uncontrolled wild fires and other abuses in general, these stocks of timber are being depleted too fast to build up a safe reserve supply at the present rate of increment. Unless proper management and conservation measures are adopted on the small forests and woodlots of the country, the present favorable trend recently reported indicating that growth has now overtaken drain cannot last for long.

Nearly 94.2 million acres or approximately 57% of the total land area of Alabama, Florida, Georgia, the Carolinas and Virginia are forest lands. Of these, approximately 7.2% or about 6.8 million acres are in public ownership while the balance of 87.4 million acres are in private ownership.

Alabama contains 32.7 million acres of land of which 64 per cent or 20.8 million acres are forested. Ninety-five percent of these forested lands are in private ownership. Florida's commercial timber lands comprise 21.7 million acres or 62.5% of the total land area of the State. There are 55,642 owners of these lands of which 34,291 are farmers. Thirty-nine tracts include 50,000 acres or more, while 603 tracts range in size from 5,000 to 50,000 acres, leaving 34,000 farm woodlands of 5,000 acres or less in size. Georgia's commercial timber land area amounts to 21.1 million acres which is 57% of the total land area of the State. Farm woodlands make up 10.3 million acres or nearly 49% of this total forested area. These forest lands are owned by 152,078 farmers. Only 78 of these tracts involve areas over 5,000 acres in extent. There are 293,000 farm ownerships in the two

Carolinas which total 25.8 million acres. Seventy-four of these tracts involve areas exceeding 5,000 acres. Virginia has a total forest area of 14.8 million acres of which over 50% of 7.6 million acres are owned by 154,451 farmers. Only one of these tracts is larger than 5,000 acres in extent, which means that 154,450 farm tracts of woodlands are classed as "small" acreages.

These all add up to a total of 700,000 farm owned tracts in these six southern states, of which 631,169 are in tracts of less than 5,000 acres. The larger forested areas are usually owned or controlled by pulp and timber companies who employ their own reforesters and consultants for managing their woodlands. These larger owners therefore do not need the services or advantages of timber cooperatives. But it is the 631,169 small owners who need to "get together" and profit by the advantages which a timber cooperative can offer. In 1952 there were 789,650 members of farmers cooperatives in the six states enumerated in this report, and there were some 500 separate cooperatives which tied these farmers together. Among these many farmers' cooperatives were associations to handle the marketing of cotton, tobacco, citrus fruits, wool, poultry, milk, nuts, fruits, vegetables, live stock, grains, potatoes and many other products of the Southern farm.

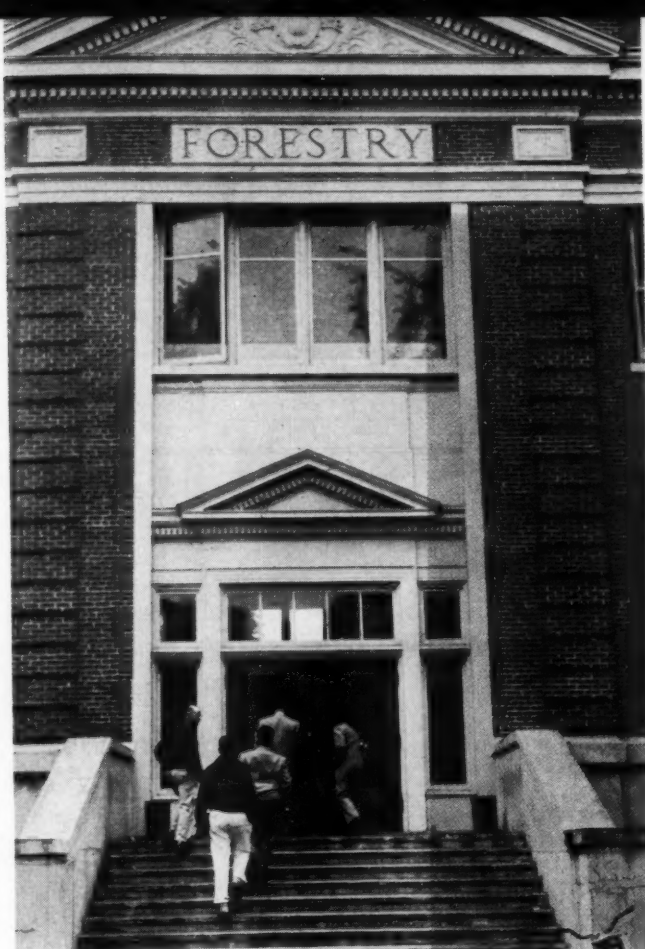
If these same farmers would take the same interest in their timber lands, much constructive work and proper management could be done for the sake of perpetual yield and the improvement of their timber stands. For example many small timber land owners usually sell their product by the "boundary" instead of by the board foot or cord as they should. Considerable volumes of good hardwood timber are growing on these small wood lots, but because of the comparative small amounts on each individual farm tract it is quite difficult for the owner to receive a fair price for his few hardwood trees.

In 1952 there were some 10,051 farmer-owned and farmer-controlled

cooperative associations and mutual companies operating in the United States with a total estimated membership of 7,090,568 members. These farmer cooperatives are bona fide business organizations that are operated for the mutual benefit of the members as producers—not as stockholders. The primary purpose of these cooperatives is to return to the producer as much as possible for the products he sells. While the principal functions performed by farmers' cooperatives consist of marketing their products, these associations also provide a wide variety of other services ranging all the way from manufacturing to farm management; services such as grading, packing, warehousing, ginning, trucking, orchard management, protection against frost, insects, etc. The Timber or Forest Cooperative can and does perform similar functions for the timber grower; marking his timber for cutting, trucking the logs and other products to market, managing the forest for sustained yield and providing consulting services on technical problems to the small timber owner member.

Such business organizations naturally cannot operate without some source of funds and the farmer is deeply concerned with these problems of costs since all expenses of handling, processing and selling his product reduce his income. There are various methods of financing these cooperatives and operating them. Probably the three most popular forms of farmer cooperatives are: (1) buy outright and resell; (2) pool; and (3) handle the product on a commission basis. The term "buy outright and sell" refers to cases in which the purchase and sale transaction are independent, so that the association takes the risk of price change during the intervening period. The term "pool" refers to cases in which the net proceeds from combined sales of farm products are divided on a pro rata basis among members participating in the sale. The term "handling on commission" refers to cases in which the proceeds of each member's products are re-

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The future is bright for young men who select the forestry profession, but few are aware of the opportunities

Careers WITH A FUTURE

By ROBERT A. MARSHALL

WHEN a youngster decides to become a forester, his parents smile indulgently as though he had picked cowpunching or space exploration as his lifework. His fantasy, they feel sure, will fade with the memory of the camping trip that inspired it.

Thus a legitimate career interest may be off to a bad start because neither the ambitious youngster nor his watchful elders have a true picture of a forester's opportunities.

The youngster may envision foresters as guardians of the tall timber, searching for signs of fire from perches on lonely mountain peaks. Or he may imagine them as glorified gamekeepers battling snowdrifts to succor starving elk.

Yet fire lookouts are not foresters at all. And real foresters rarely feed game.

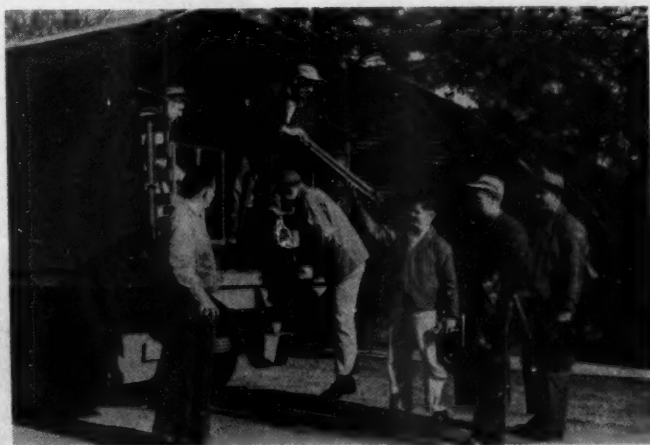
The grownups are likely to be just as far off the beam. A survey made a few years ago by American Forest Products Industries, Inc., showed that many people believed wood was an old-fashioned, out-

moded material and forests were vanishing. If those were the facts, forestry would be an unlikely career choice for any wide-awake lad.

Yet the truth is quite different. Many new ways to use wood and other forest products are being found. Modern scientific manage-

ment can make our forests abundantly productive forever. And career opportunities for trained foresters, far from dwindling, are increasing steadily. At this moment there are more jobs for beginners than forestry schools can fill.

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At the college level, forestry training is highly specialized and intensive. Here, students at Oregon State College prepare for field trip

WILLIAM B. GREELEY

"The Business of Life"

*"Now the Four-way Lodge is opened,
Now the Hunting Winds are
loose . . .
Now the Red Gods make their
medicine again!"*

THERE was a strain of the eternal poet in young Bill Greeley that gloried in the ballads of outdoorsmen, and it would come awake in him again when he harked back to the days of his youth in the Pinchot Crusade.

This abiding spirit served to bridge the differences in philosophy of resource management and forest policy that grew through the years between William Buckhout Greeley and his chief of old. He was unfailing in his praise for Pinchot the forestry leader and man, even as he was unflinching in hewing to the line of his own forestry faith after 1910.

In that year, as field commander of the forces that were overwhelmed by holocausts on 3,000,000 acres of Idaho forests, with a loss of 85 lives, Greeley literally learned his philosophy through ordeal by fire. So he wrote in the August, 1954, issue of the *Atlantic*:

"For 43 years my yardstick of progress in American forestry has been smoke in the woods. . . . Today an army of 50,000 professional fire control men, backed by a quarter of a million woods-wise loggers with a mighty array of fire-fighting machines, stands ready to defend America's forests."

In the colonel's last days on the green shore of Gamble Bay it was good that he could think of these things and recall his great part in their making. His way, from 1910 onward, had been among the people, the millions of private forestry owners. Its method was persuasion and education. He reasoned:

By JAMES STEVENS

"The forest policy of any country is an outgrowth of the unremitting pressure of people upon natural resources."

So Greeley sounded the keynote of his textbook, *Forest Policy*, published by McGraw-Hill in 1953. Its source may be studied in the Greeley report of 1916 on the lumber industry, to Chief Forester Henry S. Graves, who accepted it with no reservations. Pinchot attacked the report. The story is told in the Greeley Classic, *Forests and Men*, published by Doubleday in 1951—

"He (Pinchot) saw an industry so blindly wedded to fast and destructive exploitation that it would not change. I saw a forest economy bur-

dened with cheap raw material. Mr. Pinchot saw a willful industry. I saw a sick industry."

The Greeley prescription called for the leaders of the lumber industry to change from "a philosophy of timber mining to a philosophy of timber cropping," and for education of the forest-using public on needs for forest-fire prevention. He developed such ideas through the years, he preached an eloquent gospel on them at every opportunity, and he let the young men of forestry feel the warmth and see the color of the poet deep within him and find inspiration there.

Now today the national tree farms program and the "Keep Green" organizations owe more to William B. Greeley than to any other pioneer of



Col. Greeley is regarded by many as the father of tree farming. Here Mr. Tree Farmer receives certificate for his Gamble Bay tree farm from Washington's Gov. Langlie and W. D. Hagenstein, Industrial Forestry Association



Col. Greeley would have balked at any attempt to eulogize him. He would have unlimbered that long forefinger of his and boomed "This will never do." But no man can duck his own monumental achievements. And the colonel was a great man. Here his sergeant of work explains why

e is to Go Forward"

American forestry. My mind's eye looks along the magnificent line of achievements, in farm forestry, in forestry and forest products research, in the state departments of forestry, and the works of Greeley stand out. The temptation is to eulogize, for this scholar and soldier of the great American woods has surely put his imprint, by idea or deed, on every modern phase of forest policy and management. But he wouldn't want that, he'd never like it. And still in spirit he is The Boss to me, as he was in reality through many years of war and peace, when he was secretary-manager of the West Coast Lumbermen's Association at Seattle.

I remember the mornings when he came early to his office. This was also a habit of mine—an effect of early rising in boyhood to take care of the milking. It was seldom indeed that the boss would not drop his own work to hear my problems. They were simple at first, there in February, 1937, when my part-time assignment was to get out a monthly newspaper for the retail lumber trade. Then a program of industrial forestry publicity, focused on the forest fire problem, began to take shape in the colonel's mind. Next arose ideas for supplementing the FHA-NLMA promotion of lumber-built homes with a regional effort by the West Coast Lumbermen's Association.

"Engineering in Lumber" struck the boss as another prime theme for publicity releases, and I was put to work on a story about the 100,000,000 board feet used in the building of Coulee Dam. And surely there were stories in the WCLA Traffic Department that might be placed for reading by railroad purchasing agents, he said one day. The colo-

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EDITORIAL

The Courage of W. B. Greeley

THE forestry movement in the United States should give thanks that it is able to produce two such figures as Gifford Pinchot and William B. Greeley in one generation. Forestry is the richer for having had the leadership of these two men. There are others who surpass both in certain respects. None were more colorful. None had their genius for inspiring action.

To his everlasting credit, Pinchot surrounded himself with a most unusual band by any standards (including young Bill Greeley) and started the reversal of conservation devastation in our country. To do this he drove a wedge into the inner consciousness of the American public that is still lodged there and always will be. That was Pinchot's great contribution in becoming the very symbol of conservation in America and Col. Greeley never forgot this. Neither should we.

Pinchot and Greeley had identical goals—an abundance of well-managed forestland in America. They disagreed on how this goal could be achieved most quickly. To Mr. Pinchot, the woods industries were "willful" and required a strong regulatory hand to save themselves from themselves. To Col. Greeley they were merely "sick." Imbued with a deep faith in the ability of people to solve their own problems once they are properly enlightened, he believed that "teachers, not policemen," were the answer.

At the peak of a distinguished career in public forestry, Col. Greeley cast his lot with the then dormant industrial forestry effort. Just how much courage and faith this act required has never been fully appreciated even by the industry. The present plateau of industrial forestry achievement is in large measure the monument to that courage and faith. That peak of achievement as of today would indicate that Mr. Pinchot was wrong about the industry, that Col. Greeley was right.

However, history is the final reckoner. If private forestry continues to accelerate its efforts Greeley too will become a forestry symbol. If it backslides in the face of tests the future always brings, time will tend to diminish the colonel's stature.

Col. Greeley has gone to his reward but the challenge he laid down to forestry still lives. For ourselves, we believe the future will say that if Mr. Pinchot was forestry's Washington then Col. Greeley was its Lincoln.



Tahitian village is boarding point for tourists who wish to journey down the tropical rivers of Adventureland

THROUGH THE JUNGLES OF *Disneyland*

WHEN Walt Disney, creator of Mickey Mouse and other animated film cartoon characters who have become household names, first viewed 160 acres of flat sandy land in suburban Anaheim, California, 25 miles southeast of Los Angeles, he envisioned what others would never have dreamed of—\$17,000,000 Disneyland, which threw wide its gates to the public in mid-July of 1955. Before his magic hand began to mold it, the acreage was covered with an estimated 12,500 orange trees, in which mingled 700

By **WELDON D. WOODSON**

eucalyptus and 500 walnut trees. The nucleus of the property was the old Dominguez Estate, and long before that, it sprawled over a part of the historic Rancho San Juan Cajon de Santa Ana. Among the legends that pertain to it, one concerns a stately palm. Under it Louisa May Alcott is said to have been married.

Out of pure sentiment, Disney kept the palm. The walnut, eucalyptus and orange trees, however, were removed. Soon, giant earth movers

and bulldozers manipulated the soil like a potter with his clay so that rivers, mountains and lakes began to appear. By opening day there blossomed full-blown a replica of Main Street, U.S.A., around which are spoked the fabulous lands—Fantasyland, Tomorrowland, Frontierland, Adventureland.

To the nature lover, Adventureland especially appeals, for it embraces five acres of waterways which represent tropical rivers of the world down which passengers may cruise—the Amazon, the Nile, the Congo and the Yangtze. Life-size, mechanically-activated models of native animals—crocodiles, hippopotamuses, rhinoceroses, lions and other jungle beasts—menacingly lurk in view. In Adventureland abounds almost all of the 60,000 trees which embellish Disneyland—from six to sixty feet

Adventureland, one of the many fabulous areas of Disneyland, will particularly delight the nature devotee as it was designed to portray the disappearing wilderness lands of the earth

in height and some as old as fifty years.

Once the river beds had been scooped out, the landscape architect's job was to grow a jungle along the shores—vine-draped stumps and all the rest. To get sufficient trees, plants, seedlings and flowers to accomplish this, his quest led him to forty different nurseries. He hired a crew of thirty select men to work days and another of ten to labor at nights to minister to the wiring and watering of the thirsty plants. An old-fashioned water wagon was used in the early stages to cart the water. Later on a mammoth sprinkler system was brought into play—comprising 1065 sprinklers which carried 5950 gallons of water a minute every time the water was turned on. Now, water comes from wells on the property. To lessen the shock to the transplanted plants, vitamins, hormones, peat moss and a solution of nitro-humus had to be supplied.

Approximately half a million dollars worth of rare trees and shrubs were imported. Natives of all parts of the world, they include Brazilian peppers, magnolia, rubber, palm, pine, elm, sandlewood, oak and *Pittosporum*. Epiphytic and terrestrial type orchids bloom in Adventureland's Amazon section and Bougainville's plants present a blaze of beauty. The *Gunnera*, or bog, plant with its six foot leaves flourishes at the edge of this South American river. In the Congo area thrive lilies of the Nile and papyrus grasses, together with the Bushman (poison plant) whose juices are appropriated for poison darts. Black stem ferns hail from New Zealand; tiger grass from Malaya; eight different types of one-to-fifty-foot tall bamboo from various tropical lands. There also grow here banana trees from Ethiopia; the taro plant from Hawaii, which is concocted into the staple food called poi; and the dragon tree, which actually "bleeds" a red fluid if wounded. Too, the river banks display the sago palm, a transitional plant from the Paleozoic age when ferns began to acquire arborescent character.

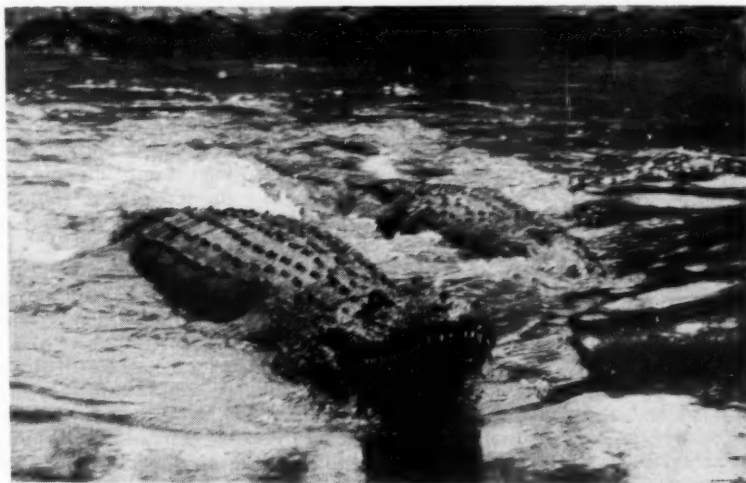
For a final touch to this Disney-designed jungle, the life-like, manipulatable plastic-and-wire animals were introduced. They perform on concealed rails and by means of electric cables. Automatic mechanisms operate the jaws, eyes and the sundry other movements. Prior to their permanent habitation in Adventureland, each had to be tested to be dead certain that it worked smooth-



Awning-topped explorer's boat barely escapes the falls of this tropical river. Elephant, upper left, looks real but it is made of plastic



After successfully eluding the falls, the voyagers are confronted by a pair of lions staring curiously through the foliage as the boat passes



For the voyagers navigating the five tropical rivers of Adventureland, the last perilous experience is a pair of crocodiles attacking the boat



In Adventureland, where authenticity is keynote, views such as this await the guests

ly. Those which reside in the water had their rehearsal first in a dry tank, then later in water.

Suppose we make a personal excursion into Adventureland. We enter through a Tahitian village where bazaars offer handicraft and other merchandise of the South Seas, India and Africa. Victorian architecture blends alluringly into the thatched roofs of Polynesia, and the quaint village itself appears weather-beaten from tropical storms. At the boat house we purchase passage on an anchored 32-foot canvas-topped explorer's boat. Manned by one of 19 pilots, our boat is the Congo Queen—although it could have been the Mekong Maiden, Sewanee Lady, Nile Princess or any of the seven craft that navigate these waters.

At the beginning of our voyage, we glimpse river banks dotted with lofty, statuesque Kentia palms transported from Lord Howe Island in the South Pacific. Then the Congo Queen negotiates a stretch flanked with a dark and shady forest populated with such plants as the stag-horn ferns—so titled because they look like antlers. The plants which require no soil and draw their sustenance from the air intertwine high in the trees above the boat. A giant tattered-leaf Philodendron primly insists on growing room in this lush vegetation typical of the upper

reaches of the Amazon.

With an abrupt turn of the Congo Queen, we find ourselves in the Mekong River, bordered with flowering ginger and banana trees. On the left stands the ruins of an ancient pagoda, now overrun by a bevy of monkeys. Centuries ago, a gold ornamental barge of a royal Cambodian prince might have docked here. Towering giraffes snugly nibble on the tree tops and cast a meditative eye on us. No sooner do we shake off an eerie feeling from this than a family of snapping crocodiles verge toward our boat, and an ancient one dozes among the water lilies.

Steaming round the bend, our dependable Congo Queen takes on the Albert Nile, one of the foremost rivers of Africa. Two baby rhinos develop a sudden case of shyness and scurry into the shelter of the tall grasses as their huge maternal parent challengingly emerges. A gargantuan bull elephant commandingly trumpets in the background; an answering trumpet dutifully sounds nearby.

Dead ahead looms a beautiful waterfall, and it seems impossible to miss it, but expert navigation keeps the craft safe. To add still more realism, however, once a pilot frantically shouted that try as he would he couldn't avoid the falls and passengers would be soaked wet if the

men on board did not pull down the protective awning. To a man they valiantly bounced up to do this. As invariably happens, though, the pilot eluded the falls by a country mile.

With the deceptive waterfalls to our backs, we are confronted by a pair of lions who stare curiously as the Congo Queen passes, unconcerned from a ration standpoint, for their forthcoming meal—possibly a freshly killed zebra—lies in the dense tiger grass at their feet. The lush grasses that seem to grow right down to the water are bullrushes, such as those delineated in the Bible.

On and on our Congo Queen churns the channels of the five-acre waterway, and, attaining the waters of the upper Nile, we are startled by a duet of baby hippos that boldly bob to the surface. On one occasion at their appearance, a trio of kindergarten youngsters—boy and two girls—dove to the deck of the boat screaming. Hardly have the two hippos threatened us when a large one rises and charges, but a quick spend of the wheel takes the boat safely onward. Even so, once a couple of sharp-eyed, Davy Crockett-garbed boys quick on the draw with their water pistols scored a bull's-eye with it as the target.

Finally, above the shrill cry of native birds and the chatter of tree-pedestaled monkeys emanates the foreboding tom-tom sound of jungle drums and an African village looms to the fore. Cannibals peer from behind trees and garish-decorated shields, their spears simulated poised for action, as the Congo Queen glides past and baffled passengers this time discover themselves under the shelf of a waterfall, with rapids in close proximity. Massive boulders are dodged by inches—and the boat is wafted to a placid bend in the river. Another native hut is seen, and, as a parting salute, one more crocodile bears down upon the boat just before it steams smoothly and safely into its berth at Adventureland's dock.

Apropos is Disney's evaluation of Adventureland: "The wonder-world of Nature's own design, featuring her animal creatures, her settings, her fabulous plan of life." It is a land to delight the nature devotee and thrill the adventurer as its arboreal tropic aura lures guests back again and again. It is a portrayal of the earth's fast-vanishing wilderness land. Restored as it is here, it refreshes the spirit as it brings the voyagers close to nature in the raw.

Charges Filed by Wildlife Institute

All 264 national wildlife refuges now open to oil and gas leasing Wildlife Management Institute says in Christmas message to sportsmen

IN a Christmas message to 40 million sportsmen in the nation, the Wildlife Management Institute announced that "practically all of the 264 national wildlife refuges were thrown open to oil and gas leasing on December 2 under a new code signed by Secretary of the Interior Douglas McKay."

The first lease issued to the Frankfort Oil Company, of Bartlesville, Oklahoma, a subsidiary of Seagram Distilleries, involving about 12,000 acres of the Lacassine National Wildlife Refuge in the waterfowl wintering grounds of Louisiana, bears the date of December 1, one day before the Secretary's order was signed, the Institute reported.

The action ends a two-year stop order during which time a study committee had been working to develop better protection for the wildlife refuges from the oil and gas

operators. The responsibilities for holding the line against the petroleum interests has been shifted to the Fish and Wildlife Service, whereas both the consent of the Secretary and the concurrence of the Service formerly were required, the Institute said.

"Now that the top positions in the Service have been filled with 'Schedule C' (non-career) appointees, the Service obviously will be pressured from every quarter," the Institute said. "Now that the doors have been opened, the Fish and Wildlife Service undoubtedly will be deluged with lease applications from operators who have been trying for years to get into these dedicated areas."

The serious charges laid down by the Institute brought a prompt denial from Secretary McKay who said he was "amazed at the unfounded charges" and noted that Dr. Ira N.

Gabrielson, president of the Institute, served on the advisory committee which unanimously approved the new regulations before they were issued. He said the rules were "gone over in great detail" at committee meetings.

"It seems strange", McKay said, "that Dr. Gabrielson did not avail himself of the opportunity at that time to register any protest the Institute might have." In spelling out his amazement in further detail, McKay said that Gabrielson did not avail himself of the opportunity at any time to register any protests the Institute might have. Gabrielson joined with other committee members in approving a resolution stating that "the proposed regulations will provide for reasonable protection for wildlife if vigorously administered," McKay said.

Pollution Control Amendments Urged

PLANs to extend and revise the federal Water Pollution Control Act that expires next June 30 were made by conservationists in December at a legislative meeting called by the National Wildlife Federation. Later in the month representatives of the Natural Resources Council of America called on the Department of Health, Education and Welfare to give this bill its full and undivided attention.

The bill (S. 890) has passed the Senate and should be one of the first orders of business when Congress reconvenes, conservationists said. It was reported last session by the House. Chairman John A. Blatnik (Minnesota), of the House Rivers and Harbors sub committee, has indicated new committee hearings will be held on S. 890. Conservationists last month appointed a committee to formulate amendments that would beef up the bill from the standpoint of actual pollution control. Members named were Mike Hudoba,

Outdoor Writers; C. R. Gutermuth, Wildlife Management Institute; and Charles Callison, of the Federation.

At the Resources Council meeting with the health and welfare department executives, Mr. Gutermuth stressed that conservationists have no quarrel with the basic philosophy of the Taft-Barkley law (Public Law 845.) This places the primary responsibility for pollution clean-up on state and local governments. The federal share of the job is one of stimulating, of coordinating, of research and surveys, and of enforcement when necessary but only in cases of interstate water pollution that can't be handled by state or inter-state action.

"Plainly, we've got to devise ways and find the means to stimulate the needed construction (there is a 1.9 million dollar backlog of sewage treatment construction needs in the country) and to awaken industry to its water problems", the council told the department. "We've got to find

ways to speed up industrial waste treatment".

The Resources Council also said that not all the blame for token appropriations that are only a fraction of the amount authorized under the Barkley-Taft bill can be laid on the doorstep of the Congress. Some of it must be shared by the Budget Bureau and the Department of Health, Education and Welfare, the group said.

The group then called on the Department to "sturdily resist any efforts to weaken or water down the bill now pending" and that it make an "earnest and positive effort" to secure appropriations adequate to the programs that will be authorized by S. 890. Furthermore the modest program of proposed stimulating grants as authorized in the bill "should not be scuttled by unnecessary red tape and by an amendment that would let one state veto the whole program".



1 Among the last of the log drives on American rivers is the Priest River, where millions of board feet of pine are floated to the processing plants

The Story of the M A T C H

THe story of the match, which uses up 80,000,000 feet of board lumber annually, or enough wood to build 25 six-room houses each day, is little known to the public. The tiny stick of wood or cardboard paper and its brightly colored head of fire-making chemicals is so commonplace today that few of us even give any thought to its beginning.

Historians guess that the first means used was the bow and stick, or simply two dry sticks, rubbed together in the fashion now practiced by Boy Scouts. There is no written proof of this until comparatively modern times when about 4,000 B.C. Egyptian hieroglyphics of those days record its use.

Two thousand years later the Babylonians named a deity for the device. They called him Gebil, "Ge" for stick and "bil" for fire. As further evidence, the Old Testament reports that the widow told Elijah that she was gathering two sticks to make a fire.

The Old Testament relates that man had found a second way to

make fire; by striking flint, pyrite or mascarite, with metal.

Galen wrote of a third means to produce flame. He related that when the Romans besieged Syracuse, Archimedes set fire to the attackers' vessels with rays from a glass. This was in 22 A.D. and it was not for another 1500 years that other methods than the flint, the fire stick or the lens were used.

There were refinements, of course. By 1517 a firestone had been added to muskets, replacing the slow match, and in 1540, the flintlock musket was introduced in Spain. By this time the tinderbox had almost entirely replaced the bow and fire stick. No household was without a box on the hearth holding a flint, a steel and some charred linen or tinder—the ingredients of fire. No gentleman ventured abroad without a small tinderbox on his person.

The use of flint and steel continued until 1827 when John Walker of Stockton-on-Tees invented friction matches; but in between a variety of novelty lighting devices enjoyed brief popularity.

The story of these pre-match novelties began in 1669 when Hennig Brandt of Hamburg discovered phosphorus during an experiment intended to result in homemade gold. Brandt admired the glowing element, but did not know what to do with it. He sold his secret and 11 years later Godfrey Haukwitz of London made a nice thing of it by retailing phosphorus to wealthy curiosity seekers at the equivalent of \$250 an ounce.

Simultaneously Robert Boyle found that by coating coarse paper with phosphorus he could create fire by drawing sulphur-tipped splints of wood through a fold of the paper. The exorbitant cost of phosphorus limited customers to the extreme well-to-do and when their interest waned, the boom was over.

This lack of interest continued for exactly a century, after which there was a momentous flurry of pyrotechnic invention revolving largely around phosphorus. In 1780 France produced the Phosphoric Candle or Ethereal Match, a sealed glass con-



By **RAYMOND SCHUESSLER**

taining waxed paper or string, tipped with phosphorus. Because phosphorus ignites in contact with the air, the paper or string flamed when the glass tube was broken.

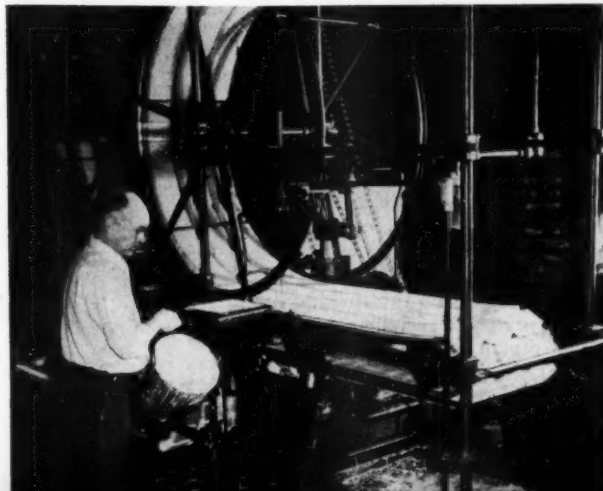
Five years later Italy exhibited the Pocket Luminary, a bottle coated inside with oxide of phosphorus. A splint tipped with sulphur, if rubbed on this lining, ignited when withdrawn. In 1805 the Instantaneous Light Box appeared, and for the next 40 years was highly popular with the dandies of the day. Known in the United States as the Emprion or Oxymuriated Match, the Light Box consisted of a bottle of sulphuric acid sold together with 50 chemically treated wood splints for \$2, or 4 cents per match.

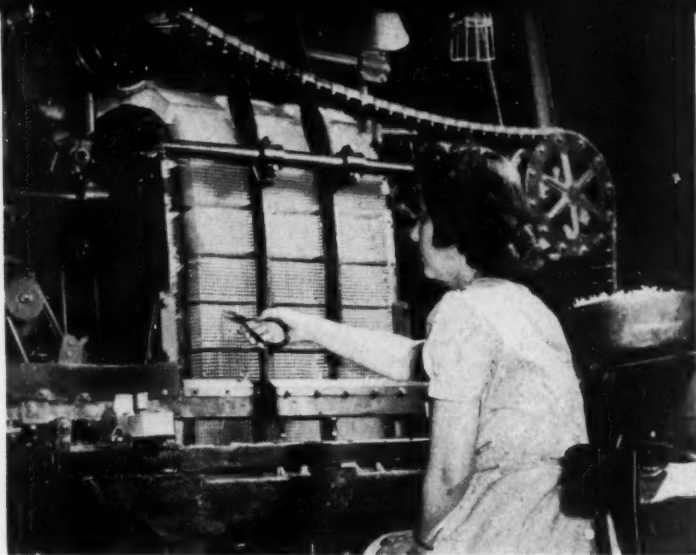
Even at this time the first friction matches were being made and sold. On April 7, 1827, an English apothecary, John Walker, noted that he had sold to Mr. Hixion. "100 Sulphurata Hypboxigeneta Frict," the first written record of a match which was lighted by friction. These first matches were three inches long and tipped with potassium chlorate, an



2 Only Idaho white pine and aspen yield wood suitable for matches. Here blocks are fed into match-making machine

3 The chemicals, which are used to impregnate the heads of match sticks, are poured directly into the match machine





4 At certain check points in the production process, matches having faulty heads are plucked from the machine by inspectors

timony sulphide, gum and starch. When they were drawn through a pleat of sandpaper (which was the striking method), they ignited with a series of small explosions and showers of sparks.

These matches smelt so badly that when Samuel Jones began manufacturing Lucifer matches in 1829, he printed this warning on the boxes: "If possible avoid inhaling the gas that escapes from the combustion of the black composition. Persons whose lungs are delicate should by no means use Lucifers."

The early days of the industry were punctuated with the explosions of many odd devices for making fire easily.

The self-lighting cigar, wearing a cap treated with match composition, appeared early in the 19th century in Austria. When the cigar was "struck" it burst into flame and the smoker inhaled the combined fumes of phosphorus, glue, paper and tobacco—but he had a light!

On the more practical side there was the Drunkard's Match created by the Diamond Match Company in 1882, which was used by bon vivants for 20 years. The splint of this match was so treated that it would not burn beyond midpoint, thus avoiding burned fingers for those who had indulged too heavily.

The Safety Match which cannot be struck anywhere except on a special area on the box cover, resulted from the discovery by Anton von Schotte in 1845 of red or amorphous phosphorus. Then years later, J. E. Lundstrom of Sweden painted this red phosphorus into the striking surface of boxes, leaving the remainder of the match composition in the heads of the matches. Without the

box, the match was practically impotent, and this way the safety match was born.

The paper book match did not appear until 1892 when Joshua Pusey, a Philadelphia patent attorney, snipped out the splints and cover with his office shears and stapled them together after first dipping the tips in match composition brewed on his stove. Pusey painted a striking surface on the inside of the cover, named his invention Flexible Matches, and took out a patent. Three years later the Diamond Match Company bought Pusey's patent, fixed the number of matches at 20, and moved the striking surface to a safer spot on the outside of the cover. By selling advertising on the cover, Diamond reduced costs to retail tobacco shops greatly enough so that the paper book matches could be given away with purchases of cigars and cigarettes.

Today more than a million books of matches are handed out free every hour in the U. S. This amounts to nearly two-fifths of the total match production of the country and is one of the reasons why the per capita outlay for matches in America is the lowest in the world.

There is more to the making of a modern match than one can guess. Let's follow the birth of a match from the forest to the flame.

The largest log drive in the United States is that of the Diamond Match Company on the Priest River in Idaho. Where once there were dozens of major drives in the country, today there are only two or three and Diamond Match is considering the abandonment of its drive after this year, substituting trucks for water transportation.

The Priest River drive supplies Diamond sawmills in the states of Washington and Idaho.

These white pine logs are shipped to Spokane, Washington, for conversion into blocks from which Diamond manufactures sticks for its wooden safety and kitchen type matches. This one drive supplies enough white pine and aspen match blocks to fill the needs of four of its wooden match factories for an entire year. No other wood works so readily and ignites so smoothly.

Popular conception of a log drive is far from what it is truly like today. It is imagined as foolhearted men riding the torrents on rolling and diving logs—occasionally breaking mountainous log jams with a daring flip of the one key log.

Instead, the job can be summed up with one word . . . WORK.

Logs come from a number of

(Turn to page 52)

5 The match industry is geared to such a degree of mechanical efficiency that matches are not touched by hand during entire process





Ovid M. Butler receives honorary Doctor of Science degree from his alma mater, Butler University. Dr. Butler is grandson of university's founder

Ovid Butler Honored

OVID McOuat Butler, "one of the ten most influential men in American forestry during the last 75 years," last month was awarded an honorary Doctor of Science degree by Butler University at Indianapolis. It was here that Dr. Butler first launched his career as a newspaper man before switching to the field of forestry.

Dr. Butler's citation read in part "... he combined his native talents and experience as a writer with his knowledge of conservation to advance the intelligent management and use of forests and related natural resources of soil, water, wildlife and out-door recreation and to interpret their problems to the American people. He has been a directing force in the enactment of legislation to preserve our national forests and parks from exploitation, and has been active in the promotion of conservation at the state level. The present Program for American Forestry has been established on the basis of his fact-finding surveys. . ."

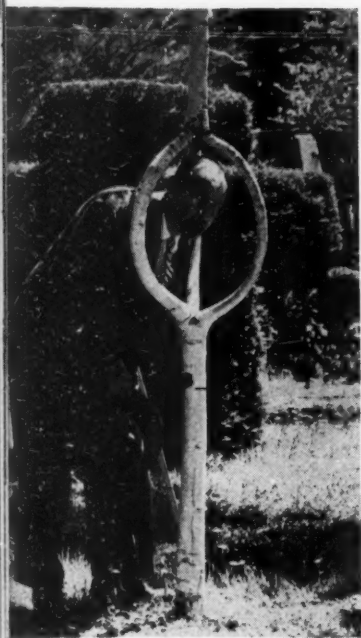
An active director-emeritus of The American Forestry Association, Dr. Butler first assumed executive lead-

ership of AFA in 1922, and brought to the association the stability and prestige so essential for effective campaigning. Dr. Butler also established a staff of specialists in the field of specific as well as mass education.

In the late 1920's Dr. Butler developed the idea of a hard hitting attack on the southern custom of woods burning. He raised \$150,000 necessary to activate the program, and launched the three-year Southern Forestry Educational Project. For the first time in forestry, the full power of visual education was utilized, including a revolutionary type of motion picture made especially for the rural South. This unique project not only brought the destructive habit of "firing the woods" into the national spotlight, but gave tremendous stimulus to state forestry in that region, and the subsequent development of state programs of forest fire protection.

Dr. Butler's on-the-ground investigations and his campaign of public enlightenment as to his findings in the late 1930's, were in large measure responsible for bringing the valu-

(Turn to page 49)



Visitor can't resist urge to put head in hole for picture



"Teepee" tree consists of nine trees across the base on width of 15 feet. Tree grows into one trunk many feet above ground

Four trees form six-foot square and merge into one trunk. This tree is 25-years old



Frames have been removed on double spiral tree, but guide wires are still necessary



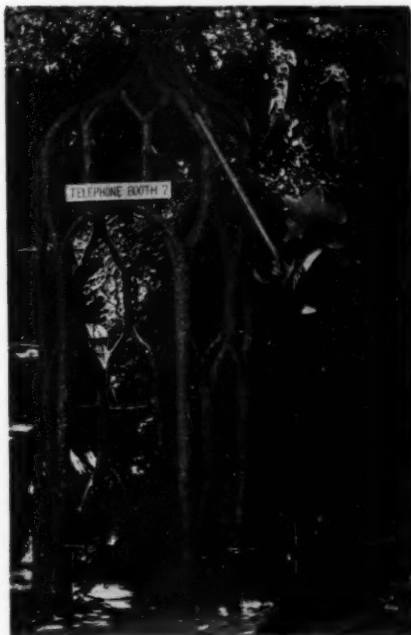
A show piece of circus is the zig zag sycamore



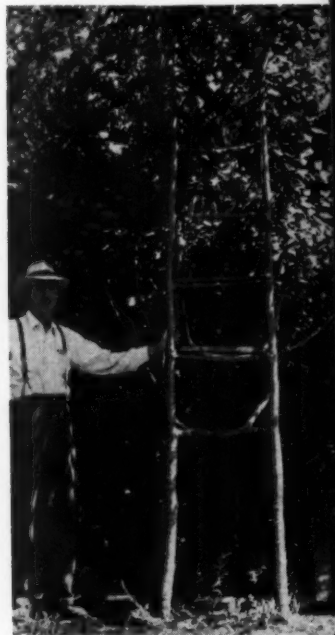
This 22-year old "needle eye" is about the most unusual in circus



Nine trees growing into one trunk form interesting "telephone booth"



This "ladder" is for ornamental purposes only



TREE CIRCUS

By JACK B. KEMMERER

AN. ERLANDSON. 70-year-old, retired California farmer, has always believed that as long as a man has his hands and the land he can always create something new and different.

For any doubters, Erlandson has his unique "Tree Circus" on the San Gatos Highway of California. Located about 6 miles north of Santa Cruz on State Highway 17 is his 25-year-old collection of trees that contain many old and weird shapes.

Upon entering this grove of strange trees the visitor finds himself between four trees, in a six-foot

square, which have grown together into one tree above his head. A little deeper in the grove is located a "living" chair tree, shaped like an arm chair. This creation was started about five years ago by planting four Balm of Gilead, a species of poplar. The building of the arm chair has continued since through grafting and interlacing.

Among the most unique trees is a fifteen foot arch of trees, consisting of ten trees at the base and finally growing into one trunk many feet above the ground. Other unusual patterns for the visitor include zig zags, spirals, hearts, and needle eyes,

with the stem growing back through the "eye."

Erlandson uses various species of sycamore, willow, box elder, ash, poplar and maple in "building" his unusual and weird collection. Many of the trees are 25 years old, but numerous smaller ones, from two to nine years old are now being developed through grafting and the use of forming frames. A great deal of attention is required to train these trees to grow into these unusual shapes, all of which Erlandson has learned through his years of experimenting.

Shelterbelt in the



By IVAN M. ELCHIBEGOFF

STALIN'S plan "for amelioration and modification of nature" in the European, southeastern region of the USSR was first decreed by the Council of Ministers and Central Committee of All-Union Communist Party on October 20, 1948. The basic data on this project has appeared in English in an article by Raphael Zon, who incidentally dubbed the project as "The Volga Valley Authority" (*Unasylva*, March-April, 1949, vol. iii, No. 2). This year the project will be five years old and shows some signs of existence. It is proposed to discuss here only the actual up-to-date results rather than an intermediate or ultimate effectiveness of the plan. According to the original schedule, the project is to

be completed in 1965, but its decisive effectiveness may not be known for decades and perhaps generations thereafter.

The proposed state forest belts of several parallel strips, each running chiefly in south-north directions, are distinct from shelterbelts planted by sovkhozes and kolkhozes—mostly by their own efforts—around individual farms, fields and orchards. Even though, occasionally and incidentally, they might serve the same purpose in protecting a certain area, if they happened to be contiguous. In which case, they would supplement and replace each other. The state belts' paramount purpose is to protect the agriculture in central Russia, Ukraine and northern Cau-

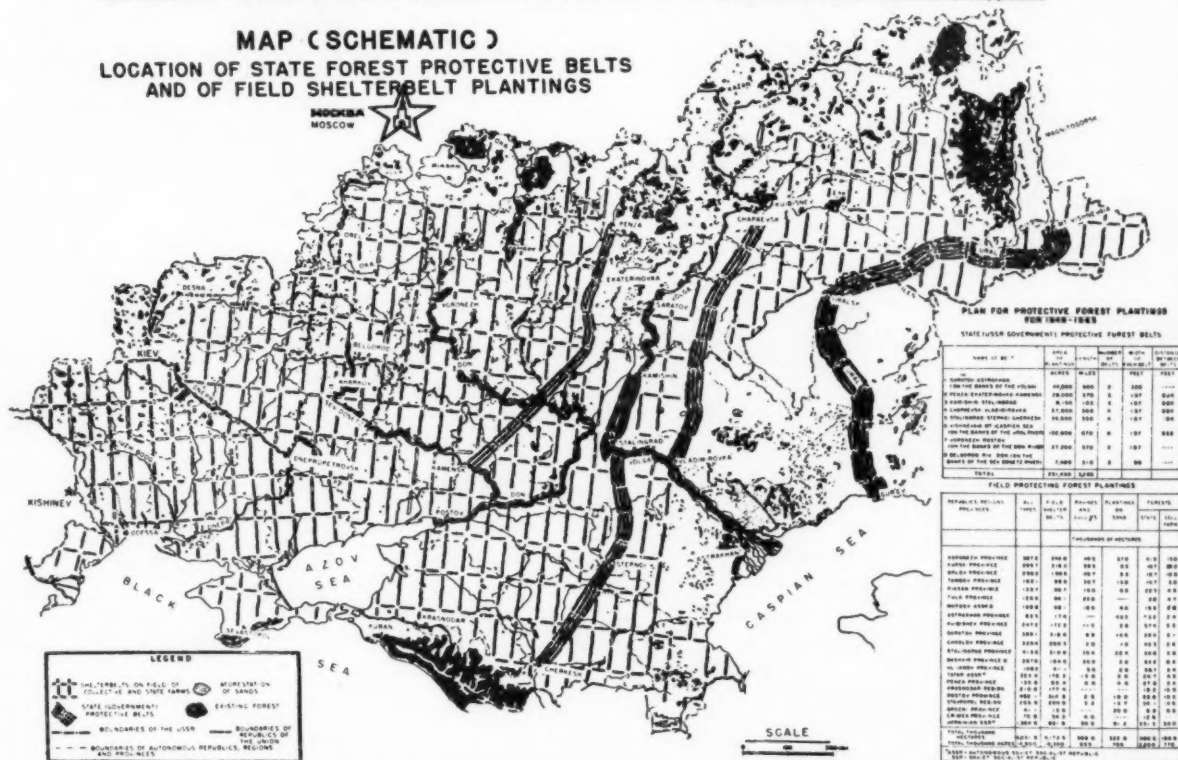
casus, from devastating sand storms and hot winds blowing from central Asia, as a whole on a regional scale, and more systematically and scientifically, and backed by the resources of the Central Government.

According to professional sources of information, the results accomplished in the 1949-1954 period must be generally considered satisfactory, both with respect to timely completion of norms assigned and techniques used in planting state protective forest belts. The exception being where work was done without consideration of local natural conditions. There the results were below expectations and percentage of survivals in seedlings planted very low.

The Russians have long been en-

КАРТА (СХЕМА) РАЗМЕЩЕНИЯ ГОСУДАРСТВЕННЫХ ЛЕСНЫХ ЗАЩИТНЫХ ПОЛОС И ПОЛЕЗАЩИТНЫХ ЛЕСОНАСАЖДЕНИЙ

MAP (SCHEMATIC) LOCATION OF STATE FOREST PROTECTIVE BELTS AND OF FIELD SHELTERBELT PLANTINGS



If the Russian plan materializes, there will be 10,000 miles of shelterbelts

gaged in technical and scientific experimentation with shelterbelts and related agricultural work in the southeastern part of the European Russia and in the adjacent areas. Nevertheless, again in advance of actual planting of protective shelterbelts, a great deal of projecting and exploratory work was done. Local technical projects were initiated to study soil, agromelioration, geobotanical factors, forest pathology, hydrology and the entire complex of natural conditions for each of the planned state protective forest belts were investigated. Experiments were conducted with various species of tree plantings on an area of several hundred thousands hectares, particularly with oaks, and the favorable

results were applied to local farm shelterbelt projects as well as to the regional shelterbelts of national significance. The national project also included the conservation of water resources for irrigation and other purposes by building ponds and reservoirs and surrounding them with forest belts.

The idea of forest shelterbelts is founded upon a simple physical law the wind meeting opposition in its movement over the earth's surface. This impediment to winds may be had by any natural or artificial obstacle. It has been aptly described as a "functional drag on the wind." This principle has always been known to man and widely used for his protection. Any barrier to the

wind would necessarily direct its force to higher altitudes and thus reduce its destructive effects and velocity over the physical factors on the earth. Man, by setting up barriers of shelterbelts, snow fences and other windbreaks has learned to protect his habitat, fields and orchards, from this action. The higher and sturdier these barriers are, the more physical protection man would get on the leeward side.

Both the Russians in the European southeast and the Americans in the Middle West and Southwest have long used windbreaks to conserve their soil, water and crops. What is new in the Russian efforts is the gigantic scale of their enterprise (Turn to page 56)

PICTURE REPORT OF INTERNATIONAL POWER

boosting job production everywhere

Through swamp muck, T. M. Lacy's TD-14A regularly skidded 500 board feet of short-leaf pine per turn on contract logging for Dimension Timber Co, Sumter, South Carolina. Though water and muck

frequently covered tracks, downtime was very low due to effective seals and heat-treated track parts. Output averaged 25,000 board feet per 10-hour day . . . 3,000,000 board feet per year.



34 hp skids 1 1/4 cords of palletized pulpwood per load . . . that was regular production of this International TD-6 at Lake Butler, Florida. Pallet was loaded by hand in cutting area, then pulled to truck-loading area for 60-mile shipment to National Container Corp pulpmill at Jacksonville. "The TD-6 did a very good job," commented Owner Nolan Ward. "It has plenty of power and is economical to operate."

1110 hours for 90¢—When this photo was taken, Del Signore Lumber Co, Gorman, West Va, had 1110 hrs on their 125 hp International UD-18A diesel, used to power complete sawmill. "In this time," reports Warren Del Signore, "it had cost us a total of only 90¢ for repairs, and only 47¢ per hr for fuel." Output averaged 5,500 bf of maple, cherry, other hardwoods per day.

Delivers 3500 bf per day—Skidding hardwood at Princeton, Louisiana, Willis Lumber Co reports their International 300 tractor uses only 12 gal of gasoline per 8-hour day. Where hauls average 300 yds one-way, output averages 3500 board feet (Doyle Scale) per day. Note how quarter-inch, all-steel belly and front brush-guards protect tractor in rough going.





Fast, safe unloading—To handle fir, cedar, and pine logs around his mill near Fresno, California, Paul Brooks uses this International Drott TD-14A. Rig unloads 20,000 to 25,000 board feet per day (1,500,000 bf per year) . . . stacks both logs and timber . . . also transports logs from truck site to cutting rack. Skidding in woods is handled by two other TD-14's.



Three TD-9's, 20,000 bf a day—With skids averaging $\frac{1}{4}$ -mile one-way, Arthur Tyson Logging Company's three TD-9's bring 15,000 to 20,000 board feet of hardwood and pine daily out of swamps near Albany, Georgia. "An exceptional record," says Supt Stewart Tyson, "with very low downtime!"

International

makes every load a pay load



Industrial Power

A machine size for every job . . . see your nearest
INTERNATIONAL
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for details.

Sectional Review . . . Northwest

Timber Hearings in the Northwest

COMPETITION, sharpening as available timber dwindles, weighted the whole tenor of a dozen days of hearings conducted in the Pacific Northwest late in November by a joint congressional subcommittee.

Demands for more access road building, faster reinventories and larger allowable cuts, more stumpage sales and simpler sales procedures, all reflected the region's rising pressures against federal timber.

Uncle Sam controls nearly two-thirds of the commercial timber in Oregon, more than half that of Washington and California. At the same time the federal forests supply less than 30 per cent of the wood harvested. The Douglasfir region alone provides close to one-fourth of the nation's forest product needs.

The congressmen—Senators W. Kerr Scott of North Carolina, Henry Dworshak of Idaho and Richard L. Neuberger of Oregon, and Representatives Clare Hoffman of Michigan and Earl Chudoff of Pennsylvania, who attended all or some of the 12 sessions in nine cities—conducted probably the most extensive inquiry yet into the government's stewardship in that region.

They took a stack of testimony sufficient to confuse a Solomon. Party politics boiled up frequently, but much basic information was assembled that will be valuable when numerous forestry bills are considered by Congress in 1956.

As Chudoff, who was chairman most of the time, said: "In our efforts to get at the facts in the Northwest's timber problems, we've found five factions on every problem, and Republicans and Democrats on both sides of each."

The lone Republican, Hoffman, repeatedly accused the committee of "running a propaganda machine" to discredit Interior Secretary Douglas McKay and create political charges to help Oregon Senator Wayne Morse, Democrat, in his 1956 drive for re-election.

Forest Service, Bureau of Land Management and Bureau of Indian Affairs probably never before endured such wholesale criticism. The most drastic suggestion, by State Representative Loran L. Stewart of Eugene, Ore., and Day Bayly, ex-county judge of Eugene, was to turn the timberlands over to the states, if the government cannot manage them as well as state and private foresters.

A forester-engineer, Robert P. Conklin of Cascades Plywood Corporation, Portland, urged that all federal forests be consolidated "under one policy and one system of management to bring every acre to its maximum growth capacity."

In Oregon, he pointed out, forestry is being practiced in various ranges of intensity and under many policies by seven agencies: the Forest Service, BLM, BIA, Soil Conservation Service, Bonneville Administration, Army Corps of Engineers and National Park Service.

Milder proposals included standardization of timber sale methods, right-of-way regulations and appraisal yardsticks. Several witnesses urged use of paid and unpaid non-agency people, such as an advisory board for the Forest Service, a board of road engineers, and efficiency specialists in administration.

Forest Service and BLM have boosted annual allowable cuts under sustained yield programs in past

months, and both promise further boosts will be made as reinventory work progresses. But industry spokesmen declared this is not enough.

National forests of region six contain an estimated 309 billion feet of timber on 17,100,000 acres. BLM controls about 48 billion on 4,000,000 acres in the Northwest, and the Indian Bureau around 17.5 billion on 3,000,000 acres.

Allowable cut can be increased at least 50 per cent, declared Edward P. Stamm, timber manager of Crown Zellerbach. This can be done because of "known scientific forest management principles of complete utilization, modern logging and road building methods."

"It is wrong to hoard static or overmature, decadent timber when, under sustained yield management, old-growth forest can be converted to young, thrifty, fast-growing forests," said Stamm.

Undercutting, he charged, has led to suicidal competition for public timber, and is pricing lumber out of the market because of overbidding on the restricted timber offered for sale. Another effect is failure to recover huge losses by insects, disease and windthrow.

But a former Oregon governor, Charles A. Sprague, Salem publisher, called for caution: "Under pressures of local distress we should not be stampeded into speeding up the cut of federal timber."

"No amount of timber inventory stretchout will provide timber to keep all the existing mills operating on a permanent basis, and neither the bureaus nor Congress can increase trees ripe for cutting."

For six years chairman of the Oregon & California grant lands advisory committee, Sprague protested the heavy pressure to boost allowable cut from the 2,000,000 O & C acres. He warned too much cutting will cause the region to "run into an interval of great timber deficiency

Government stewardship of Northwest timber was the subject of a congressional inquiry. Although reams of testimony were taken in the region, its peculiar problems have yet to be solved

before reforested acres are ready."

Everyone demanded more access roads, but how to build them drew many answers. Larger operators and W. D. Hagenstein, managing director of the Industrial Forestry Association, the Douglasfir region's tree farm group, asked that only main-line roads be built by the government, the remainder by logging operators.

Smaller operators, increasingly dependent on federal offerings, and also union officials insisted Uncle Sam build all but the temporary tap-lines, and in this way make smaller timber sales and wider competition possible.

One spokesman, John F. Buchanan of Sutherlin, Ore., a director of Western Forest Industries Association, demanded that agencies condemn privately-owned roads, if access cannot otherwise be obtained. This particularly affects O & C holdings, which contain 5240 parcels largely intermingled with private tracts.

In turn Hagenstein argued: "Private timber owners who are landlocked by O & C lands should have an equal right of condemnation if the government attempts to impose unreasonable terms for a crossing permit."

While on the stand, Senator Morse submitted copies of a bill he said he would introduce in Congress to provide more access funds. The bill would provide for each of the ensuing four fiscal years, \$50,000,000 to the national forests, 25 per cent of receipts for O & C roads (Interior Dept. has started action on this one) and \$5,000,000 for other BLM lands.

Another impressive plan for roads was outlined by industrial forester Stamm. He asked for 10,000 miles of main roads on federal forests of the Douglasfir region alone at the rate of 500 miles a year for 20 years, to be financed by appropriations of \$15,000,000 or more a year.

More than 1500 miles of access roads and lateral spurs also are needed to develop the allowable cut, he said. This would cost up to \$35,000,000 a year and should be done through timber sales. Up to 40 per cent of timber along new routes can properly be sold to build roads, leaving 60 per cent for sale later in all sizes of tracts.

In response to a question by Rep. Hoffman on government road building operations, Mr. Stamm said that costs depend on local conditions but said that government specifications were sometimes too exacting, that

local soil and climatic conditions should be given careful study and that in general a need exists for longer term planning to give contractors more time. Mr. Stamm said that his company, Crown Zellerbach, builds about 75 miles of roads a year for 10 to 20 thousand dollars a mile whereas government roadbuilding costs often range from 40 to 80 thousand dollars a mile. Too much "landscaping" in the form of meticulously manicured slopes was given as one reason for the cost of government logging roads by Mr. Stamm.

The Forest Service and BLM were blamed by many witnesses for not arranging access to timber being offered. The former was accused of being too lax in giving rights-of-way without obtaining reciprocal rights in return, and stiffer legislation was asked.

Timber sales policies were pummeled from all sides. One faction asked that sale methods be spelled out in more detail, another demanded the opposite. Several operators urged at least uniformity among all the agencies. The three major ones reported they are jointly developing a more uniform appraisal system.

"It's almost as difficult for the agencies to sell one tree as one million board feet," said Stewart. "The average federal man is a competent technician who wants to do the best possible job, but he is hamstrung by administrative regulations dreamed up in Washington," said Hagenstein.

Personnel policies were subject for more hammering. "We have five times the number of foresters on our lands than the government has, on a per acre basis, and we're barely able to keep up with our work," said one head industry forester. "They're so busy on sales, they can't practice forestry."

"The Forest Service continually transfers the more promising young foresters out and replaces them with new men we must help them train," complained another industry executive. "The agency pays only one-half to two-thirds the private industry scale, so loses many foresters to industry."

Senator Neuberger rated salaries shockingly low, but said industry pleas for better federal pay reminded him that while the last Congress was considering increases he received no letters from lumbermen backing the idea.

Senator Morse rebuked the Agriculture Department for not having

(Turn to page 59)



United States Senator W. Kerr Scott



U. S. Representative Earl Chudoff

Crown Zellerbach's Edward P. Stamm



Sectional Review . . . Northeast



Selectively logged stand of mixed white pine and hemlock on a New England woodlot

Wood Chips from Yankee Land

DURING exactly three and one-quarter centuries industrious Yankees have kept busy converting trees into useful forest products. In 1631 the colonists built one of the first sawmills on record at South Berwick, Maine, across the Salmon Falls River from Dover, New Hampshire.

The manufacture and export as early as 1608 of forest products from the Jamestown Colony gives the Virginians prior claim but more than three centuries of continuous production is still a long time to be in the same business in the same region.

Perhaps our Yankees through the years have been too busy operating their varied wood-using industries to know except from their current

check-book balances and their annual tax returns how they have fared financially in the business of helping to meet the demand for forest products. The larger corporations, of course, have their cost accountants and periodic balance sheets but the small operator, whether he be timberland owner, stumpage contractor, or mill manager, is often at a loss to know when, where, and how the red ink occasionally creeps into the ledger.

Present indications suggest the answers may be forthcoming. The Sears Roebuck Foundation, through a grant announced late in 1955, is financing the cost of record-keeping on fifty individual timberland owners in New Hampshire (five rep-

resentative holdings in each of the ten counties). With the cooperation of top-level and tree-root officials in the U. S. Forest Service, the Federal and State Extension Services, the N. H. Forestry and Recreation Department, and other related groups, trees on those fifty carefully selected ownerships are going to grow dollars, as well as board feet and cords, during the next decade.

Cash returns (as well as expenses) will be detailed along with the mill tally on standardized cost records supplied by the Foundation to the fifty cooperators. The objective is to determine the real financial returns from carefully managed small woodlots in the hope that tangible evidence will be forthcoming to demonstrate to other states that a healthy rural economy can result from prudent management of their timberlands.

If the enthusiasm generated by a "kick-off" luncheon sponsored by the Foundation in Concord, N. Y., on

Selected small woodland owners in New England will receive financial assistance from the Sears Roebuck Foundation in determining actual financial returns from well managed woodlands

October 4 is any indication, the cost records will be conscientiously compiled. Lights may burn well into the night on some New Hampshire tree farms this winter as timberland owners compute their income and outgo. These fifty "pilot project co-operators" will be developing significant records of interest to all concerned with a sound rural economy in regions where forest crops are or can be important.

The shade of Paul Bunyan's Johnnie Inkslinger will fall on another segment of New England's forestry fraternity in 1956 when the Second Northeastern Logging Congress assembles in Woodstock, Vermont, during mid-April. One of the main topics already scheduled for

ity of the forest and the industrial owner to the people. He has consistently demonstrated his keen awareness of the moral obligation that stewardship of a large acreage of land imposes upon an industrial owner."

Increased utilization seems the inevitable trend for 1956. Harvesting low-grade hardwood for pulp is already "cold turkey" on most paper company operations. The use of chips from barked slabs and edgings is fast becoming standard practice at concentrations of sawmills near paper mills. Already one large wood particle board factory has been established in the region with in-

terrain of magnificent proportions and long snow seasons (for the Northeast) will be available to the ever-increasing ski public. About 650 acres are involved on the north and northwest slopes of Wildcat Mountain along the east side of Pinkham Notch directly opposite Mount Washington.

New Englanders were understandably pleased that the 1955 American Ski Trophy was awarded October 25 by the National Ski Association to the late Hannes Schneider of North Conway, N. H., who died on April 26, "at the summit of his efforts and assistance to the skiers of the United States." The Committee of Award further stated that "Mr. Schneider had made one of the most outstand-



Federal and state foresters will help owners in marking timber for cutting



The results of the cost study being financed by the Sears Roebuck Foundation will alleviate one of the problems of small woodland owners—bookkeeping methods

that gathering of full-time loggers and lumbermen is how to keep better and more useful cost records of their varied and intricate operations.

The New England Council, assembled in Boston on November 17-18, saw fit to bestow its Fourth Annual Forestry Award "for distinguished service in forest management" upon Louis J. Freedman, vice president in charge of woodlands for the Penobscot Chemical Fibre Company of Great Works, Maine. Mr. Freedman's citation concludes with the following significant tribute by Hugh Gregg, Council president and former governor of New Hampshire: "His concept of forestry has always gone far beyond the mechanics of managing forest stands and has penetrated deep into the philosophy of social responsibil-

creased production of "chipboard" a strong probability.

More ski facilities are currently being constructed than at any time in the winter-recreation history of New England. More are in the discussion and fund-raising stage. After months of public discussion as to whether the U. S. Forest Service should waive its long-standing policy of rejecting applications for special-use permits of a commercial nature, Gerald S. Wheeler, Supervisor of the White Mountain National Forest, announced on November 29 the decision "to solicit applications this coming spring from those who might be interested in building a major ski development on the slopes of Wildcat Mountain in Pinkham Notch."

If such a permit is granted, a ski

ing contributions to American skiing and that his outstanding example and encouragement to the skiers of the United States was of extreme benefit."

Yankee skiers will follow closely the results of the Olympic Ski Games at Cortina, Italy, because so many of this country's competitors are well known throughout the region.

This is a busy winter in Yankee Land, where some work and others play in the timbered uplands, but all strive to make the most of their opportunities, whatever they may be.

On December 18 the Hannes Schneider Ski Trail was dedicated at Cranmore Mountain and a memorial plaque unveiled on the slope where Hannes' well known figure is missed this winter.

by Robert S. Monahan

Sectional Review . . . Southwest



Overgaard sawmill camp, in heart of pine forest, is partially dependent on Aztec timber

Arizona on the Warpath

ARIZONA is up in arms. The citizens of this state are almost unanimously backing a proposal to return nearly 100,000 acres of northern Arizona land to the national forest system.

The land in question is the so-called Aztec Land, 96,000 acres of alternate mile-square sections arranged in a checkerboard pattern within the Sitgreaves and Coconino National Forests. For 50 years these lands were considered a part of the national forests, until a series of court decisions awarded them to the Aztec Land and Cattle Company of New York. Legislation has been introduced in Congress to authorize the Forest Service to purchase these lands from the Aztec Company. This

bill has passed the Senate, but still awaits action in the House of Representatives.

The "fly in the ointment" in this story to Arizonans is the National Lumber Manufacturers Association. Its active opposition makes passage doubtful. Local opinion in Arizona, from rancher to legislator to lumber manufacturer, is solidly behind the bill. But the case has attracted little national attention and until The American Forestry Association spoke up no national organization has appeared to fight strongly for the conservation issues involved.

For half a century this land was administered as an integral part of the national forests, with no serious effort by Aztec to assert its claim.

Then in 1942 the Santa Fe Railroad, acting in behalf of the Aztec Land and Cattle Company, filed application for patent to the land, claiming that it had been sold 50 years before. The Department of Interior denied the application, and the railroad and the cattle company took the case to court. Much to the surprise of the government attorneys, the lower courts upheld the railroad's claim. The United States Court of Appeals also ruled against the government, and in 1951 the Supreme Court refused to review the case. Thus 96,000 acres of checkerboarded land which had always been assumed to be part of the national forests suddenly passed into private ownership.

The Aztec Company is not a lumbering concern. Its only interest in its newly-acquired land has been to get the maximum possible return from it as soon as possible. The company has two courses of action open to it: it can sell the land to the

Ninety-six thousand acres held by the Aztec Land and Cattle Company are for sale, but who the purchaser should be, the U. S. Government or a private operator, is most controversial

federal government, or it can sell to a private purchaser.

What will happen if these 96,000 acres are held in private ownership? To answer this question it is necessary to examine the area where the land is located. The plateau country of northern Arizona supports an almost unbroken stand of mature ponderosa pine, growing under an average rainfall of about 20 inches per year. This is close to the minimum which will support forest growth of any kind. Timber quality is high, but growth is slow. In contrast to the pine forests of the Northwest and the South, where timber will grow at the rate of 400 to 1000 board feet per acre per year, average net growth in the Southwest is only about 100 board feet per year. Under intensive management production might reach 200 board feet per acre. This growth rate might be enough to make it barely possible to manage these lands in private ownership as a permanent forestry enterprise. The question is, "Would it be done?"

The overwhelming weight of the evidence is that it would not. Virtually all the timber on the land is mature and ready to cut today. Under Arizona law, it will be taxed each year that it remains standing. This tax burden alone will be a great incentive to liquidate the timber as rapidly as possible. While commercial forestry might be made to pay on these lands, the return would be so low compared with forestry operations elsewhere that any large investor would be well advised to place his money in some other location. There is no private timber land in Arizona to use as a yardstick, but there is about a million acres of very similar land in New Mexico in private ownership. To all practical purposes there is no commercial sustained yield forestry being practiced in New Mexico. The "cut out and get out" policy forced on landowners in that state by the same economic conditions which hold in Arizona is a clear indication of what would happen to the Aztec lands under private management.

The large investment required to purchase these lands would probably force any private buyer to engage in a liquidation policy in order to get his money back within a reasonable time. The cutover land would then in all likelihood revert to the counties for non-payment of taxes. One of the most likely purchasers has stated that their intention would be to cut off all the tim-

ber and then attempt to exchange the land to the Forest Service for national forest stumpage. Thus the land would eventually again become a part of the national forest system, but not until irreparable harm had been done to its productive capacity. Perhaps most serious would be the damage to the watersheds of the Salt and Little Colorado Rivers following a liquidation cut.

Every lumber company operating in the affected area prefers to have the land managed by the Forest Service. None of them wish to buy it, nor do they want to deal with an outside private owner. Their operations are all based on a permanent orderly cut from the National Forests. Timber is cut selectively under Forest Service supervision, and a predictable volume will be available annually into the indefinite future. Liquidation of a part of the timber upon which this sustained yield operation is based would throw an excess of timber on the market for the next ten years. Much more important, it would thereafter reduce the cut available to the mills which now depend on it. The checkerboard pattern of the Aztec lands would create serious problems in administration for all concerned. These problems, however, could be solved provided there was a sincere desire to do so on the part of the Forest Service, the private owner, and the lumber companies.

Under Forest Service administration income will exceed costs of

ownership by a small amount. This will satisfy the public interest, where a similar return would not be satisfactory to private enterprise. Since 25% of national forest receipts is paid to the counties in lieu of taxes, the counties will receive more in the long run under federal administration than they would under private ownership. The commissioners of both affected counties prefer that the land be kept in federal ownership.

As a result of all these problems, Congress has been asked to authorize purchase of these lands from the Aztec Land and Cattle Company. The Forest Service has made a detailed and conservative appraisal of the land and timber involved. Using this appraisal, the bills now before Congress have set a ceiling price of just under \$6½ million as the maximum which will be paid for the land and timber. The exact price is to be set by the National Forest Reservation Commission, composed of senators, representatives, and Cabinet members. The Aztec Company claims that the land is worth much more, but it is expected to sell at a price agreed upon by Congress. Sponsored in the Senate by Arizona's senators of both political parties, the bill has passed that body. A companion bill, H.R. 2787, sponsored by Representatives Udall and Rhodes, is now awaiting action by the House Committee on Interior and Insular Affairs.

(Turn to page 60)



Selective cuttings remove about thirty-five percent of total timber volume



Cutting old and overmature ponderosa pine under Forest Service supervision

Ohio Accents Water



K. Starr Chester (left) and William Laybourne (right), both of Ohio Forestry Association, planning improved watershed protection for state

THE 40th anniversary of a highly successful conservation project was noted in Ohio this year. In the spring of 1913 Dayton was called a doomed city. A loss of over 300 lives and of property valued at \$100 million might well have doomed the most flourishing community.

But public spirit was not washed out by flood waters. In June 1915 the Miami Conservancy District was created by men and women who were determined that such a disaster should not be repeated. Present-day evidences of prosperity and security undreamed of 40 years ago wipe out memories of the vast sums and efforts expended.

Now the same organization, backed by privately subscribed funds, is studying the very reverse of the problem it was created to solve—namely, the prevention of water shortages. Lack of sufficient water in the Miami Valley can spell disaster as certainly as a flood. Competent engineers, backed by a solid citizenry, can find ways and means to store water for a time of need, just as they found ways and means to defend themselves from the violent excesses of 1913.

The Ohio Forestry Association's newest and most important publication, "Valleys of Opportunity," is now ready for distribution. Embod-

ing a year's research on the part of many experienced and capable men, it contains in its 64 pages, 16 pictographs, 12 maps, 4 charts and 11 tables on soils, water, forestry and conservation, and an analysis of the economics of the state's water needs. In the form of 26 recommendations, it outlines a long-range plan to cure water shortages at lowest cost to Ohio citizens.

A supplementary booklet, "How to Develop Watersheds," is also available, providing suggestions on organizing programs to improve water supplies, reduce floods, develop irrigation and drainage, reduce pollution, increase land conservation and expand recreation facilities. It is intended as a guide to civic, industrial and agricultural leaders who wish to promote private and public interest in their own watersheds. It suggests how local watershed problems may be determined by means of a simple watershed score card.

The Ohio-grown Christmas tree is rapidly becoming an important aspect of agricultural business of the state. It has been estimated that there are about 400 growers of Christmas trees now and annually the number increases. Most of the big producers are interested in growing and distributing quality trees and are doing all they can to secure and share information on grading,

pest control, color control, and merchandising. As one step in this latter phase, a five-minute motion picture short on Christmas tree production has been made and will be shown over eight stations on an Ohio TV circuit.

Governor Frank J. Lausche, an ardent conservationist, has been supporting an extensive tree planting program for Ohio during the past several years through the Governor's Plant Ohio Committee. This Committee, composed of representatives of lay organizations and leaders in state government, is taking an active part—on a state-wide basis—in promoting an interest in reforestation, and roadside and urban tree planting. This coordinated effort has already trebled tree planting over what it was a few years ago.

As a follow-up to the manual "Planning School Forests," published in 1955 by the Ohio Forestry Association, the School Forest Committee of OFA has arranged for a workshop conference for teachers and school leaders on April 14, 1956, at Yellow Springs School Forest, Yellow Springs, Ohio. Dr. Carl Johnson, Professor of Conservation Education at Ohio State University and Chairman of the School Forest Committee, has announced that this workshop will give teachers an opportunity to practice in the woods what they hope to teach to their own students in their classrooms and school forests. Dr. Kenneth Hunt, Antioch College, will be in charge of the conference.

Ohio can be justly proud of its watersheds that have been developed, but there is still much to be done. The OFA long-range plan may solve many of the problems.

Every species of tree is prey to some type of insect, and in the Lake States insects and diseases take a heavier toll of timber annually than forest fires

Wisconsin Tackles Forest Insect and Disease Problem

MORTALITY and loss of growth in the Lake States' forests caused by insects and disease is 221 times greater than that caused by fire.

According to the Timber Resources Review mortality and loss of growth by insects and disease in the Lake States' forests amounted to 844 million cubic feet, while similar loss caused by fire amounted to only 4 million cubic feet. These figures are for the year 1952.

Though Wisconsin has for many years been a top-ranking state in forest fire control, protection from insects and disease has not been supported by law until this year.

Passage of Bill 45-S by the 1955 legislature dealing with the control of forest insects and disease on privately as well as publicly owned lands, is considered by many as important as Wisconsin's original forestry appropriation law. In Wisconsin funds for forestry are not dependent upon appropriations by the legislature but are based on an annual tax of .2 of a mill levied on every dollar of the assessed valuation of property in the state.

Designed along the lines of forest fire legislation, Bill 45-S is a part of the same chapter in the statutes. Control measures will now be taken by the Conservation Commission upon recommendations of entomologists from the Conservation Department and the University of Wisconsin. The new law places the responsibility with the Commission instead of with the State Department of Agriculture.

Provisions are made for the establishment of zones of infestation once a forest pest has been located.

The state's share of the cost is to be not less than 50%. Private woodland owners pay part of the cost if they own tracts of 160 acres or more in a county. The law states that every owner of forest property shall exercise every reasonable effort to control or destroy forest pests. In

case of his failure, neglect or inability to do so, the work may be performed under the direction of the Conservation Commission.

Methods to be followed do not al-

the land. A public hearing will be held in regard to this factor unless delays would result in an epidemic infestation.

Upon establishment of a zone of



U. S. Forest Service Photo

To preserve such forests as this stand of government-owned virgin mixed hardwood timber in Bergland Tract on Peshtigo Ranger District, Wisconsin passed legislation for control of insects and diseases on public and private woodlands

ways include the use of insecticides, as is popularly believed. Silvicultural practices also play an important role in pest control. However, these practices will not be enforced by the Wisconsin Conservation Department, but will be encouraged by education.

When an area is infested or threatened with infestation by forest pests, the Commission will determine whether measures of control are necessary and are available at a reasonable cost in respect to the value of

infestation, the Conservation Commission will carry out control measures if the owner refuses, neglects, or is unable to do so.

Outbreaks of forest insects have taken exorbitant tolls of our forests. The forest tent caterpillar heavily infested 3,128,000 acres in Wisconsin in 1954, taking a year's increment from defoliated trees.

There is no species of tree that is not preyed upon by some insect.

by M. N. Taylor

Florida's Forest Fire Fighters Alerted

WITH all indications that Florida will have another serious fire season, the Florida Forest Service is doing everything possible to prepare for the worst. The woods are dry. Rainfall during the past two years has been far below normal and water in many lakes and swamps is at its lowest level on record. Both the State Road Department and the Game and Fresh Water Fish Commission have offered active cooperation in case a large, serious fire develops that cannot be controlled promptly by the Florida Forest Service.

The Florida Forest Service has received most of its new fire fighting equipment and the balance is expected at an early date. In all, 19 pickup trucks, 36 transport trucks, 25 tractors and 36 plows were ordered. Some of this will replace old worn out equipment and some

will be used in the five new counties brought under fire protection since July 1 of this year. Four planes will be delivered by the middle of January, two as replacements and two additional ones.

The Florida Board of Forestry received title to a 150-acre tract of land near Chiefland in Levy County for a pine seedling nursery. Clearing and grading operations have begun and plans for laying out beds, a water supply, irrigation, and packing sheds are complete. The nursery will have an annual capacity of 25 million seedlings.

Shipment of this year's bumper crop of 57 million seedlings from the Munson and Olustee nurseries began November 15. While 57 million are a lot of seedlings, orders for this year exceeded 87 million.

by J. Edwin Moore



Lookout towers play an important part in combatting the forest fire menace

Louisiana Gives Full Support To Arson Conference

STATE Forester James E. Mixon of Louisiana hailed the coming Southern Forest Fire and Woods Arson Conference, slated to be held in New Orleans on Friday, April 13, as "the most far-reaching conference ever to be held in the South."

With more than 6,500 forest fires started last fiscal year by arsonists out of a total of 10,200, Louisiana is one of the hardest hit states in the nation by deliberate burners, Mixon pointed out. Arson fires were responsible for an acreage burn of 110,000 acres.

Despite the terrific losses at the hands of the arsonist, however, a small segment of the Louisiana public is yet aware that most of the state's forest fires are attributed to this cause, although the full strength of the Commission's press program has been aimed at this program, he added.

"There is a definite need for a meeting of the minds, so to speak, so we can find out how to cope with

the problem better," he said. "We have got to inform the public and, by doing so, automatically brand the arsonist as a criminal so courts will levy stiff sentences upon these people when they are caught."

Louisiana's forest fire weather forecasting is being perfected more this year, with daily fire weather

forecasts being transmitted every morning on an area basis.

The Commission's enforcement agents will try something new in the hardwood, deer hunting area of the state this year in an attempt to put a stop to the fire losses attributed to deer hunters in past years. Chief Investigator V. E. Smith and his men will set up "check points" along the major road junctions in Concordia Parish the evening before deer hunting season opens and continue the operation for several days. At these "check points" they will stop hunters going into the area and ask them for the driver's name, license number and approximate location while they are in the area, explaining to the hunters what the Commission is trying to accomplish and asking their cooperation.

"We are willing to try anything to avoid a re-occurrence of the fire situation in this area," Mixon said. "It is sincerely hoped that some of our fire prevention operations pay off this year."

by Ed Kerr



Louisiana's State Forester J. E. Mixon

Society of American Foresters Elects Officers

Two AFA Members Named to High Posts in Society of American Foresters

DEWITT NELSON of Sacramento, California, was elected December 3 as president of the Society of American Foresters for the two-year term 1956-57. He succeeds Elwood L. Demmon, of Asheville, N. C.

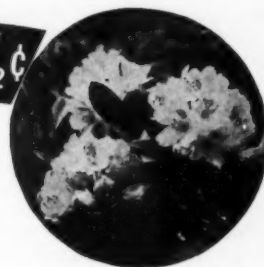
Mr. Nelson is also a newly elected member of the board of The American Forestry Association, and was recently appointed chairman of AFA's Forest Landownership Study Committee.

Director of the California Department of Natural Resources, Mr. Nelson was vice president of the Society during the biennium 1954-55. Mr. Nelson graduated in forestry at Iowa State College in 1925, and for the next twenty years worked for the U. S. Forest Service in California, starting as a timber scaler and working up to the rank of supervisor of the Shasta, Tahoe, and San Bernardino National Forests. In 1944 he was appointed deputy director of the California Department of Natural Resources; in the following year he became state forester and was promoted to his present position in 1953.

Another AFA member, George A. Garratt of New Haven, Connecticut, dean of the Yale University School of Forestry, was elected vice president of the Society. With forestry degrees from Michigan State University and Yale, Dr. Garratt has been in forestry education for the past thirty-five years, first at Michigan State, then at the University of the South (Tennessee), and at Yale since 1925. He has been dean of the Yale School of Forestry, the oldest forestry school in the Western Hemisphere, since 1945. He is the author of two books and numerous technical bulletins and papers on forestry and forest products.

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(25)	(100)
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16.00	58.00
16.00	58.00
12.00	42.00

These named species will give you gorgeous bloom from May to July.

Kalmia (Mountain Laurel) (Pink-white, June)	\$27.50	\$100.00
Rhododendron maximum (White, July)	27.50	100.00
catwbiense (Rose, June)	35.00	122.00
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Leucothea (White, May)	27.50	100.00

LANDSCAPE SIZE — Several - stem clumps balled & burlapped, 10 to 12 inches. Express on 25 about \$5.00 on arrival.

(25)	(100)
\$27.50	\$100.00
27.50	100.00
35.00	122.00
35.00	122.00
27.50	100.00

5 of one kind at 10 rate, 50 at 100 rate.

SAMPLE 5—One each of kinds listed at left, 10-12 inch, BGB Landscape Size, postpaid \$9.25.

LARGER 5—One each, or sorted as you wish, 1½ to 2 ft. high, BGB, boxed for express (about \$5. extra on arrival). Box of 5 for \$16.75.

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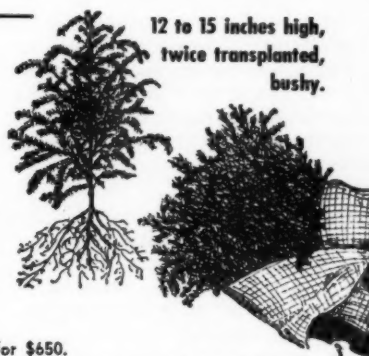
25 for \$18

Quick-growing, handsome evergreens. Grow in sun or shade. Hemlock makes the most beautiful of all hedges. (Space 18 inches apart in row). These trees are lusty 6-year-olds, ideal size for safe shipping. Express on arrival (\$1.50 to \$2.00).

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Larger Sizes (15 to 18 inch), 25 for \$35, 100 for \$130.



12 to 15 inches high, twice transplanted, bushy.

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	(10)	(100)		(10)	(100)
ACER (Maple)			PLATANUS		
Rubrum (Red Maple)	4 to 6 ft. \$15.00	\$125.00	(Amer. Sycamore)	4 to 5 ft. \$12.50	\$95.00
	6 to 8 ft. 22.00	180.00		6 to 8 ft. 22.50	175.00
saccharum (Sugar Maple)	4 to 6 ft. 15.00	135.00	POPLAR Carolina	4 to 5 ft. 10.00	85.00
	6 to 8 ft. 22.00	180.00	Lombardy	5 to 6 ft. 6.50	55.00
platanoides (Norw. Maple)	4 to 5 ft. 16.00	135.00	Bolleana	4 to 5 ft. 15.00	125.00
CLADRASTUS (Yellow-wood)	4 to 6 ft. 30.00	250.00	SALIX (Willow)		
CORNUS florida (dogwood)	4 to 5 ft. 30.00	250.00	Babylonica (Weeping)	4 to 5 ft. 11.00	95.00
HICORIA (Shagbark Hickory)	4 to 5 ft. 20.00	150.00	Wisconsin (Hardy Wpg.)	4 to 5 ft. 11.00	95.00
JUGLANS nigra (Walnut)	6 to 8 ft. 25.00	225.00	Golden Weeping (Niobe)	4 to 5 ft. 11.00	95.00
cinera (Butternut)	4 to 5 ft. 15.00	125.00	SORBUS (Mountain Ash)	4 to 5 ft. 20.00	190.00
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OXYDENDRON (Sour-wood)	4 to 5 ft. 17.50	125.00	ULMUS (American Elm)	5 to 6 ft. 18.00	145.00
			pumila (Siberian)	5 to 6 ft. 15.00	130.00

5 of one kind at 10 rate, 50 at 100 rate.

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Careers With a Future

(From page 17)

Foresters and Their Jobs

The forester's domain includes more than a fourth of the U.S. land area, 182,000,000 acres of publicly owned forests and another 345,000,000 acres of private woodlands.

A primary duty of every forester is to protect this vast empire from fire, erosion, insect pests, disease and man's depredations. But foresters are not just custodians, any more than forests are merely natural museums.

Forests exist to be used. They may be harvested for lumber, pulpwood, veneer, turpentine, pharmaceuticals and other products. Or they may furnish forage for livestock, fun for sportsmen and recreation for all.

The forester's purpose in life is to see that the forests are protected and used, wisely and well. While he wars against waste and destruction, he also works for businesslike management and sustained production.

That makes him an important man in any forest, whether it is being harvested for lumber or pulpwood, farmed for Christmas trees, or simply maintained to preserve a steady supply of clean water on an important watershed.

As a profession, forestry is both young and small. Timber growing has become a profitable business in this country only in the last quarter-century. Professional training for forest management dates back only to 1898.

Today there are at least 15,000 practicing foresters. Their field is so broad, however, that the Society of American Foresters lists more than 40 specialties. Among them are tree cultivation, wood preservation, forest economics, game and wildlife management, wood technology, logging engineering, market studies, range management, forest protection, timber measurement and valuation.

Fewer than half of the professional foresters are employed by government agencies, even counting those who work for highway, game, taxation, parks and recreation departments of state and local governments.

Close to 7,000 work for private businesses, including the industrial producers and users of forest products. Another 2,000 work in wildlife and range management, engineering, erosion control, miscellaneous

research activities and the manufacture and sale of forest products.

The Work and the Pay

In a profession embracing so many activities, there is no "typical forester's job." In the U. S. Forest Service a man who has become a district ranger might spend part of his time on administrative duties, such as issuing grazing permits to sheep growers or use permits to persons wishing to build cabins in the woods. At other times he might be in the field, inspecting communications, directing subordinates and otherwise supervising his district.

A forester employed by a lumber firm, on the other hand, might spend his time buying timber to be logged. Or he might work at eliminating cutting waste or developing new ways to utilize the lumber produced.

Still other foresters are in business for themselves as consulting foresters, offering their professional help to woodland owners just as veterinarians provide their services to livestock owners or public accountants serve their businessmen clients.

Generally speaking, there are two main roads to the top in the profession: through technical or research jobs and through field or operating jobs.

The beginner in field work usually faces a variety of tasks. He may be sent out "cruising," which means surveying forest lands to locate cuttable timber, estimate its volume and judge its quality. Or he may be put to "scaling," the task of measuring the volume of individual logs already felled. He might also mark timber for cutting or work at reforesting cutover areas or surveying ranges.

If he were employed by the U. S. Forest Service, he might look forward to rising from junior forester to assistant ranger, district ranger, forest supervisor and even loftier positions. If he worked for a pulp and paper company, on the other hand, he might aspire to being a wood buyer, forest surveyor, the company forester, a woodlands manager or even vice president in charge of raw materials supplies.

The upward path on the technical side of the profession might lead from a modest position as laboratory worker or assistant to a research

worker to such posts as research project leader or research director or to a top administrative position.

Setting up a practice as a consulting forester can come, of course, only after ten or more years of experience in the profession.

Pay for beginning foresters often is not as high as salaries in engineering or some other well-paid professions, but it is respectable.

In the U. S. Forest Service, for example, junior foresters earn \$3,670 during their one-year probationary period. Assistant rangers get from \$4,525 to \$5,335, rangers' pay goes up to \$7,465, and forest supervisors make from \$7,570 to \$10,065.

Those who enter the services in research positions generally start at a higher salary because advanced degrees and specialized knowledge are required. A person with a master's degree, for instance, could expect to begin at \$4,525. If he had a doctorate, he probably could start at a salary of \$5,440.

In private employment, starting salaries run about the same and sometimes slightly lower, but the pay level for experienced foresters tends to be higher. The ceiling depends upon the individual's ability to handle high administrative responsibilities as well as upon his professional competence. Some top foresters in private industry make \$20,000 a year and more. Many consulting foresters earn over \$15,000.

Preparing for the Job

What does it take to succeed in this profession? Enthusiasm for the outdoors, for one thing, plus a rugged constitution. Much hard physical labor is involved and sometimes actual hardship.

Since forestry is an applied science, the aspiring forester should have a logical, inquiring mind. Since it also is a business, business acumen and familiarity with business methods are important, too.

Fundamentally, forestry involves a natural resource that always can be renewed with proper management but that can be destroyed if improperly managed. Thus the successful forester must have high principles, a sense of responsibility to his fellow men and the integrity to insist upon conservative practices even when strong pressures favor wasteful ones.

He also must be willing to forego the comforts of city life and spend much time far from even the smallest towns.

Although many foresters are trained in the Northeast, the most promising job frontiers are in the Pacific Northwest and the Southeast. The forester must be willing to go where the jobs are and to make frequent moves.

And the profession demands first-rate education. Thirty-seven colleges offer professional forestry curricula, 26 of them accredited by the Society of American Foresters. Twenty-six additional schools offer various introductory, preforestry and specialized courses.

The professional curriculum normally covers four years and leads to a bachelor's degree. Students usually have opportunities for summer employment in forest occupations, a valuable preparation for their professional lives.

Some high schools teach elementary forestry subjects, useful mainly for guidance. Foresters advise getting as broad a cultural background as possible in high school and taking every science and mathematics course on the schedule.

At the college level, training is highly specialized and intensive. Many schools urge good students with special interests to take a fifth year of advanced work.

How the Future Looks

Employment in the U. S. Forest Service is fairly stable. Each year, competitive examinations are given to qualified candidates for positions as junior foresters. About half of each year's crop of 1,000 forestry school graduates take these tests. From their ranks the service usually hires 150 to 250 new foresters.

In private industry, however, the demand for foresters is mounting, and there are more openings than applicants. Here is why.

►The market for forest products is expanding. Rapid new developments in such industries as plywood, paper and plastics are putting a premium on efficient, economical use of woodlands.

►The forests are being worked more intensively. New roads and new logging systems are making it possible to tap timber stands once regarded as too inaccessible to log.

►More and more woodland owners are recognizing what scientific forest management can do for them. By developing multiple uses and sustained production, they can earn more profits over longer periods.

Key man in all three trends is the forester. He alone has the training, knowledge and outlook to locate new markets, work out new ways to utilize forests and manage production so that it will be continuous.

And there is no end in sight to the expansion of opportunity. A forthcoming U. S. Forest Service survey is expected to reveal that more than half of the land capable of producing commercial crops of timber is in the hands of 4,500,000 people who are not now in the timber business or related businesses at all.

Soon these people, too, will dis-

cover that their holdings can be made profitable and productive by professional foresters. That assures a bright future for the young men who today are only dreaming about making forestry their lifework.

This article was written by Robert A. Marshall, staff member of the Kiplinger magazine, and appeared in CHANGING TIMES, August, 1955.



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Colonel William B. Greeley

(From page 19)

nel's mind turned to the uses of publicity in fortifying the case of West Coast lumber against the Reciprocal Trade Agreements—with which the State Department was taking business away from Washington-Oregon lumber ports and giving it to Canada. So I did a lot of writing on the theme of "Vanishing Ships and Missing Men."

Col. Greeley sent me on the rounds of the retail lumber trade, the Federal Housing Administration offices and other agencies of home building, to develop a publicity program that eventually was channeled through 14 regional retail lumber associations and the national manufacturing and retail organizations.

I was sent forth on farm-building stories, done in cooperation with the agricultural engineering departments of the state colleges. And on to the school authorities, for school construction features on the one hand, and for conservation education essays on the other.

And that's not the half of it. Actually, by the spring of 1942, with the boss's tree farms and "Keep Green" ideas really surging on the progress road, and a big new effort on the "Wood Goes to War" theme, I had to take a two months' rest. I had to, because the colonel said I'd be shot on sight if I didn't.

By 1943 the once half-time publicity chore had a second technician at work—in the Eugene, Oregon, branch office of the Association, and a third in the Portland office. They were Arthur W. Priaulx and Arthur K. Roberts. And by that time the Cole & Weber Advertising Agency was employed in a program of monthly service in local newspaper advertising by WCLA members. Greeley thought up many of the ads and wrote much of the copy. A by-product was my weekly newspaper and trade publication column, "Out of the Woods."

The point here is to highlight one corner of the works of W. B. Greeley as the complete forestry man. He has been famously known all these years as a creative spokesman for industrial forestry and an originator of its philosophy and many of its programs. He was also, I emphasize, the architect, builder and interior decorator of the Public Relations Department of the West Coast Lumbermen's Association. In this minor

phase of his activities he was no provincial. His was the master's hand in the making of American Forest Products Industries, Inc. And he gave us the themes, "Timber Is a Crop" and "Tree Farms."

Here's an example of how he worked. In 1937 I brought an interesting collection of mine to the attention of the boss. One item illustrates its nature. It was James Truslow Adams' characterization of the historical American lumbermen as "hogs at a trough." The colonel looked it over, with thanks. About three years later he referred to my collection again as "The Lumberman's Hellbook," and asked me why I didn't have the quotes mimeographed for mailing to industry principals as evidence of the need for education of the public on "the real facts about the lumber industry and lumbermen." It was done. I can yet hear the angry roars echoing.

Now the boss worked with each department of WCLA as he did with mine—Grades, Traffic, Forest Conservation, Trade Promotion, Timber Engineering, Governmental Relations, Statistics, Accounting. He was a complete cooperator with other industry associations, also. . . .

I remember the colonel's room. It was a big corner office in the WCLA suite of the White-Henry-Stuart building in Seattle. The windows opened on a wide, quiet court. A monstrosity of a long oak table ran from the entrance door to a far wall. It was spread with reference material. "Paul Bunyan's Baseball Bat," a Hoo-Hoo gift, stood there with the statistics and graphs, a mock menace to members of the staff. On the far wall hung a vastly enlarged photograph of a dense stand of Douglas-fir, a birdseye view. The pattern of tops was like that of an abstract painting. There was a home-made wall desk, designed so that the colonel could write standing up. Then his work desk, huge, ugly, oaken, and many rugged and solid office chairs. The carpet was rough, tough and drab. A big framed motto stared the visitor in the eye with the message, "The Business of Life is to Go Forward." It meant much to the boss and he made it mean much to all of us.

There was no fooling about the office of Col. William Buckhout Greeley. It was a place for the kind of hard serious work that his long

line of American ancestors would all have approved. The first one landed in 1630, and became a Congregational minister. So did five others among his American grandfathers.

But it was a place of warmth and cheer in my memory. There was seldom a session without a story—commonly told for its value as a parable, 'tis true. And mainly the yarns were of things that had happened. One that I heard several times, to illustrate the contrast between the governmental officer and the private owner in their ideas of public land use, told of Bill Greeley's first experiences as supervisor of a California national forest. The stockmen of the area bucked hard against the new grazing regulations of the Forest Service.

A bunch organized a protest meeting. Young Supervisor Greeley stood up to the stockmen. "On my national forest the range is in bad shape," he grimly stated, and talked on to hammer home the rules in force on his domain. A grizzled waddy calmly rolled a Bull Durham cigarette, lit up, and drawled through blue smoke:

"When the young supervisor just now talked about his national forest, it sort of reminded me of the time when the old Devil took Jesus Christ to the top of a high mountain. He offered Christ all the kingdoms of the earth . . . All of them, mind you. And the old s.o.b. didn't own a damn' acre!"

Here was repeated the account given by Congressman Martin Smith to Col. Greeley and Corydon Wagner of President Roosevelt's outburst against lumbermen as he looked upon a Douglasfir cutover from an Olympic Loop Highway road. The booming voice of the old ranger would really rise as he came to the presidential line, "I hope the lumberman who did that is roasting in hell!" This was in reference to the lumber industry's need for employment of the modern science and art of public relations. The good story to be told was that seedlings had made a start on the site the President had cursed, but a cigarette fire had burned them off and blackened the cutover. Today, by the way, a dense young forest has again greened over the stumps. Roosevelt was wrong.

And there I heard how Harold

Ickes had spoken at the Port Angeles Chamber of Commerce, solemnly stating that the powerful iron fence around the White House grounds had been built to keep visiting lumbermen from stealing in and cutting down the trees.

The son and grandson of Congregational ministers was adept at quoting Scripture. At one committee meeting in his office the discussion was on the advisability of promoting a bright young employee to a job that carried much responsibility. The colonel thought the lad needed more seasoning. He remembered his II Samuel 10: 5, and paraphrased, "Let him tarry in Jericho 'till he grows a beard!" He was outvoted, however, and gracefully gave in. Afterward he did more than any other three men to help the boy make good.

Col. Greeley also dedicated himself in 1940 and '41 to completing the education of a young forester of brilliant promise, William D. Hagenstein. The youngster had won his spurs as a boss logger, as well as a Duke scholarship, and in the process he learned to employ the language—at times—of a windfall buckner. The boss tried fining him two bits for every bloody oath uttered in the Greeley office but gave it up as the hole in the forester's income grew. Instead, a new Greeley story began to make the rounds.

"Hagenstein was at a social gathering of foresters and their wives," Greeley related. "He became warmed up in an argument. An old lady who looked like Whistler's Mother was listening. At last I whispered an apology to her for some of the words Hagenstein was using. She looked at me wide-eyed.

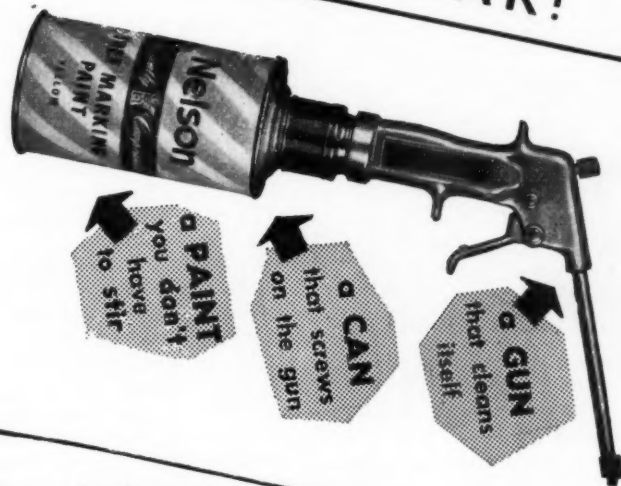
"'And,' she said, 'why should I give a damn what kind of words he picks?'"

Hagenstein owned, then as now, a terrific personality and was a fluent speaker with a resonant voice. I began to make dates for him all over the map, to talk on the theme of "Timber Is a Crop—the Harvest Is Homes." One morning Col. Greeley called me up on the carpet.

"Jim," he said, pointing a mighty forefinger over his desk and aiming it between my eyes. "Jim, I'm going to have a big plaque made, one that will cover the chest of Bill Hagenstein. And it will carry this order, 'No trespassing by the Public Relations Department.' That is all."

He meant every word of it, too. I cancelled the remaining Hagenstein engagements in a hurry. And I had

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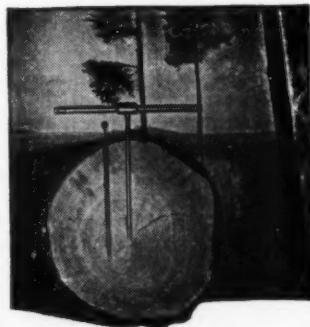
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another Greeley story to tell. One thing I knew. That aimed forefinger meant business.

From the middle of 1940 on through World War II lumber procurement for military uses was a giant problem that dogged the secretary-manager of the West Coast Lumbermen's Association day and night. For months on end he would work a 90-hour week. Luck was with him when Harold V. Simpson joined his staff, as association manager in Washington, D. C. The transcontinental team worked so well that Simpson automatically moved up into the big corner office when the colonel took retirement at the end of 1945. Greeley remained on the WCLA Board of Directors, however, as a vice president.

So the one-time Yale stalwart of the Pinchot Crusade, the tall ranger of the Sierras in the long ago, the commander of a forestry force of 20,000 in France, the former Chief Forester, entered the evening of his day on the handsome shore down the bay from old Port Gamble in the Olympic Peninsula and Puget Sound region. The headquarters of the association were moved to Portland. A branch was maintained at Seattle. Greeley kept an office there. He wrote two books, *Forests and Men* (Doubleday) and *Forest Policy* (McGraw-Hill), and endless articles. He remained the guiding genius and money-raiser for Keep Washington Green that he had been at its feeble start in 1939-1940. He was in nation-wide demand as a speaker on forestry affairs. Then in 1949 Greeley accepted the post of board chairman for American Forest Products Industries, Inc. In his last two years he gave his main strength to work for the Yale endowment program, which includes a memorial to Henry S. Graves. Even in his times at home with Mrs. Greeley on their 37-acre tree farm he contributed time, thought and effort to Kitsap County forestry programs.

I worked on with him these last nine years, off and on, as opportunities offered. It is well-nigh impossible for me to write about the boss in any objective way, for too many shapes of people and things rise out of times past. I cannot concern myself very much with the top-level record of his life and works. The barest outline fills a page, in elite type, single spaced. . . .

An image flashes of the gray coat lapel, with its miniature bar of the Distinguished Service Medal. He also had the right to wear the colors

of a Chevalier of the French Legion of Honor and the British Distinguished Service Order there. An old Infantry drill sergeant, I always gave honor to the colonel's well-earned decorations. But when I dwell on these things the memories come of the times when the boss gave me some pretty rough goings-over. Each time at his "That's all," I stood up at attention in front of his desk, clicked heels and snapped him such a salute as he'd never seen accomplished in his SOS forestry outfit. Each time a grin trailed me as I about-faced and marched out.

How fair he was, in all things. I've never known a more satisfying experience in all my literary life than the effort that, first, secured his agreement to write the book that became *Forests and Men*, and, second, aroused the interest of Howard Cady, then Pacific Coast editor for Doubleday, in the project. The colonel wrote draft after draft for some chapters, taking suggestions and criticisms from both Cady and me like a lamb. His humility was most inspiring. And he came through with a classic, a book of evergreen glory.

Then he asked me to write the foreword. I urged him to invite Herbert Hoover, his old friend and co-worker, to write it. There were other high and mighty men who would have been more than pleased to prepare a signed foreword for a Doubleday book by William B. Greeley. But he stuck to his resolution to leave the job to his old WCLA publicity bullcook.

His faithful and wonderfully able secretary through his years with the West Coast Lumbermen's Association, Ann E. Nordstrom, looks all the way back to 1928, and says, "How fair he was—how fair and friendly and kind, through his heaviest sieges of work. Never did I mind working hours of overtime for Colonel Greeley."

It is such tributes that count most in measuring the man. A great heart beats no more.

MIDWESTERN SHADE TREE CONFERENCE

The 11th annual meeting of the Midwestern Chapter of the National Shade Tree Conference will be held February 22-23-24, 1956, in the La-Salle Hotel, Chicago, Illinois. The purpose of the organization is to encourage the planting of more trees and ornamental shrubs, to raise the standards of tree care practices.

Ovid M. Butler Honored by Butler University

(From page 27)

able revested O & C lands in Oregon under forest management.

After World War II, Dr. Butler launched a nation-wide fact finding survey to reveal to the American people the status of their forest resources after the heavy drain to meet defense needs. For this project he raised a quarter of a million dollars from citizens, institutions and industries throughout the country. When the survey had been completed, Dr. Butler enlisted the aid of national leaders in the formulation of a realistic national program of forestry. To insure full discussion and widespread understanding of the issues involved, he called the Third American Forest Congress.

Perhaps even greater in many respects than his educational achievements were Dr. Butler's outstanding literary and publishing accomplishments. The growth and effectiveness of AMERICAN FORESTS during his quarter-century editorship is testimony to his talents as a writer and editor. Dr. Butler's editorial page, particularly, was so widely read and quoted as to constitute in itself a powerful force in molding an informed and alert public mind.

During his editorship, Dr. Butler initiated a series of books, to make the American people increasingly aware of their forest heritage. Foremost among these are: *Knowing Your Trees*, *American Conservation*—*In Picture and In Story* (which Ovid Butler himself compiled and edited), *Teaching Conservation*, *Managing Small Woodlands*, and *Trees Every Boy and Girl Should Know*.

Many honors have been conferred upon Dr. Butler. He is a past-president of the Society of American Foresters, was an American delegate to the World Forestry Congress at Budapest in 1936, and in 1952 received the AFA Distinguished Service Award in the field of education. His Award citation read in part "... with this remarkable record, and with his continuing drive to 'get the facts before the people,' ... has earned the highest award that can be bestowed for this achievement. In the field of public education in forestry, he still stands alone."

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CONSERVATION CHARTS

The Conservation Chart that was furnished as a supplement to the April issue of American Forests was received enthusiastically by the members. Many members have ordered extra copies to give to camps, schools or individuals. We have a number of copies remaining on a first-come, first-served basis. The price is 50c each postpaid.

The American Forestry Association
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Is Farm Forestry on the Wrong Trail?

(From page 11)

the farm or at the mill, railroad, or factory. The cooperation of industry should also include a sympathetic and helpful attitude toward the farmers' wood-cropping program—this would be a less difficult task.

Another important matter; when the forestry advice reaches farmers who have accepted the wood-cropping concept, it must be in simple form. It must be something that a farmer can understand and use. If wood-cropping or any part of a program on the farm is to succeed, it must be the kind that the farmer can carry on himself. There will never be enough foresters to do the work in the woods for all farmers, and, in my opinion, this is not even desirable.

We can certainly express the tech-

niques applicable to the management of farm woodlands in brief and easily understood terms because the operations in the woods are simple. For example, Homer Mitchell's D+ system,¹ which is designed to leave properly spaced growing stock serves as a guide for thinning and regulation of the cut. Foresters and other agricultural workers are successfully getting farmers to take hold of the management of their own woods by using this easily understood and easily applied system. An editor of one of our leading farm magazines recently remarked, after seeing the results of farmers' use of this system: "This program strikes me as being the long-awaited answer to our farm woodland problems." This should be evidence of the value of holding our forestry practices, to be used by farmers, to a level comparable to the size and nature of the problems encountered in the management of farm woodlands.

Are there any foresters who hesitate to simplify forestry techniques for farm woodlands because of a fear that fewer foresters will be needed? That the result will be fewer forestry jobs? I hope that there are none who would hesitate for any such reason; and yet I have heard that such fears are whispered. Surely we are primarily concerned with the success of farm forestry—having our farm woodlands producing good wood crops—which also means the success of agriculture for so many farmers. Consider the impact of a worth-while revenue from the woods on the status of the large number of farms now classified as submarginal. Successful forestry in any field cannot help but result in a broader field for the practice of professional foresters. If we can succeed in getting even a substantial majority of the 3 million or so farmers who need wood-cropping to accept it and to act accordingly, the number of foresters needed would be greater than forestry schools could turn out.

Not only would the field for public foresters be increased, but consulting and industry foresters would be in greater demand too. Many farmers are not in a position to grow wood as an annual crop. They are the absentee owners, the specialty farmers, those with woodlands so large that commercial forestry fits their needs better, or the farmers are

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too old to be interested in attempting to increase their woodland income. Such farm owners would realize the forestry opportunity from the success of their neighbors and would call in the consulting foresters. Even some of the wood-cropping farmers, those having high valued species, for instance, would call in the consulting foresters to help them learn how to make more money by better silviculture, marketing or processing methods. Naturally, the consulting foresters would be shortsighted indeed if they attempted to convert a wood-cropping farmer to the practice of commercial forestry.

Perhaps the best argument in favor of simplified techniques for farm woodlands is the success that farmers here and there have achieved in managing their woods without the benefit of any appreciable help from foresters. I can tell you about a few of them.

Verne Johnson of Riverdale, Montcalm County, Michigan, has managed his 31-acre woods for logs, fuel, maple sap and special products for more than 40 years. He first hung 200 buckets for maple sap. By slowly working to improve his woodland, he has hung 1200 buckets the last few years, including some on trees that he planted himself. All farm buildings were built from material obtained from his woods. Mr. Johnson has done all his own logging, cutting nearly every year. His average net income, above wages, for many years has been about \$16 per acre per year (but wages should be included as in other crops). For-

esters didn't do this, the farmer did, but Mr. Johnson has profited in recent years by the advice of farm foresters, or perhaps it would be more appropriate to say that they have taken heart by what Mr. Johnson has to show in his woods.

There are others like the Polok Brothers of Schley, Wisconsin, who learned to manage their 200 acres of hardwood forest without the benefit of expert forestry help. Their success is a shining light in the Wisconsin woods. Then there is the story of A. D. Clements of Rice Creek, Oneida County, Wisconsin, whose father tried to make a conventional farmer out of a boy essentially a woodsman. He turned out to be a sort of a farmer, but mostly his living comes from a 450-acre woods and he learned woods management by practicing it.

And then I always think about a farmer (I have forgotten his name) down in the Carolinas whom I visited years ago. He lived on a farm but his fields were mostly growing broomstraw. He had some pasture but his chief activity was in his 50-acre woods, the chief source of his income and his woods looked pretty good. "How do you make out on this farm," I asked him. "Well," he said, "I used to try to raise cotton and corn but it was mighty hard work. I kinda took to the woods and I do better working at that. The woods keep growing about as fast as I can cut, so I keep whittling away and I get all the money I need and a lot easier than any other way I know about. Been at it now for

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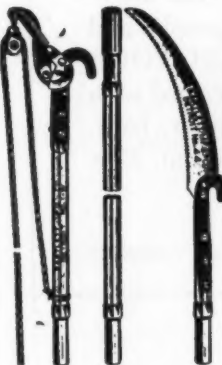
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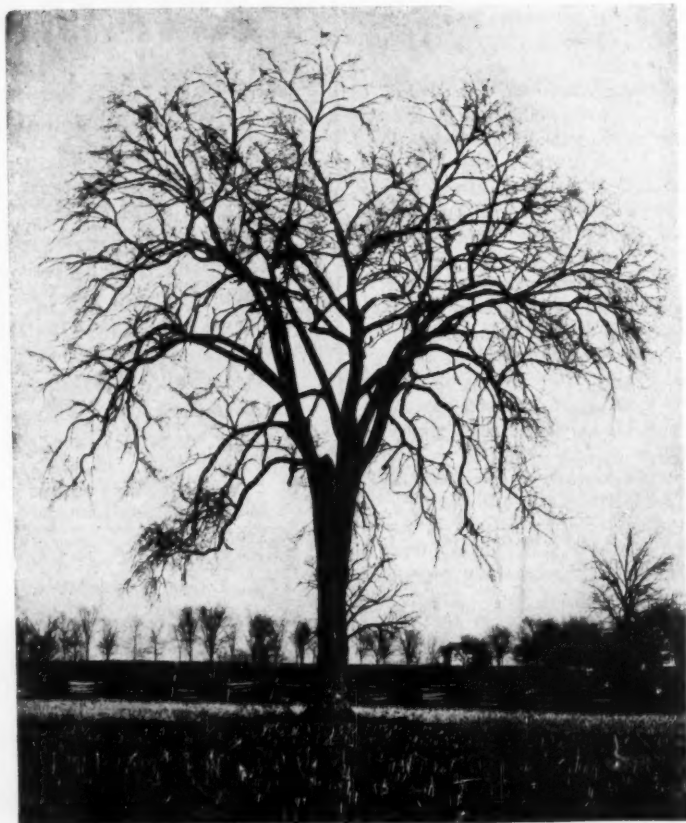
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more'n 30 years. Yes, some foresters been to see me and I am glad to get their help. I can see where I've made a lot of mistakes but not like I did trying to grow cotton."

These farmers have made a success, without a forester's advice, at least in the beginning stages, but all of them need improvements in the techniques they have been using in the past so they can make a better income out of their woods. When it comes to growing wood as a farm crop, the primary forestry job is the development and adaptation of technical practices that can be taught the farmer. The farmers must carry out these techniques themselves. The fact that many farmers have succeeded without a forester's help should be sufficient incentive to foresters to simplify their farm forestry techniques.

Let's get farm forestry on the right trail. Let's build a proper foundation. Let's call in *all* agricultural workers to help the foresters get wood as a farm crop established in agricultural lore.

¹ H. C. Mitchell. "Regulation of Farm Woodland by Rule of Thumb." *Journal of Forestry*, Vol. 41, No. 4, April, 1943.

The Story of the Match

(From page 26)

Diamond Match Company camps above Priest Lake. Logs are small—averaging less than 18 inches in diameter and 18 feet or less in length. From Camp 6 on Indian Creek, logs are being floated the 6 miles to Priest Lake via wooden flume. Then they are towed across the lake in big rafts and let loose in Priest River.

Before logs are turned loose down the river in the spring, a few of the log drivers go down the river, getting rid of old snags and other debris that might hold up the drive. They break up jams that may have formed by logs started downstream in fall or winter; a few logs are released during the year.

As soon as the water starts to rise, the bulk of the logs are dumped into the river. A raft at a time—which contains a million or 2 board feet of lumber—maybe a day apart. This year, 26 million feet of timber were released down the river—about average these days. The biggest drive on record was 90 million feet; it was the logs from more than one company, however. Loggers never speak of the number of logs, but always in terms of how many board feet they contain.

After all the logs have been released and a few weeks before the river is assumed to be reaching its peak, the drive is on. Men load their peavies and lunch boxes into the bateau and start down stream from Priest Lake. A crew of about 18 men walked down each side, working logs away from shores; those in boats work at logs caught amidstream. Logs caught on banks and piling back upstream are called "wings"; logs caught and piled up amidstream are known as "centers." Log drivers use the term "jam" only when the logs are piled *all* the way across the river, and this seldom happens.

Though wings and centers sometimes break free with a rumble when water is swift and men find a "key log," most of the time each log must be broken loose from the tangle and wrestled into the stream. Much of the time men are wading to the waists—sometimes they wade into their necks to bring out logs that have floated back into the bushes in the high water.

When water is very high, as sometimes happens, more of the logs float downstream by themselves; but those that are left are jammed higher and tangled with more snags and float further back into bushes.

Driving logs down river is a great deal cheaper than using trucks—probably 1/10 the cost of trucking. The same is true of flumes, although manpower to build them costs about 15 thousand dollars per mile and requires a year to complete.

Log drives have been taking place on this 67 mile river since 1901. As far as is known, this drive and one on the Clearwater are only ones still being conducted in U. S., and this year there is none on the Clearwater.

After the logs are shipped to the match factory, the real job of converting the huge logs to tiny wooden splints is under way.

The match industry must be geared to a high degree of mechanized efficiency, since the product involves the handling of small units each day.

A typical match machine is capable of producing from 900,000 to 1,125,000 matches per hour, depending on the width of the endless chain on which the matches march to maturity. During this evolution from block of wood to a box of matches, wrapped and ready for shipment to consumers, the match is not touched by a hand.

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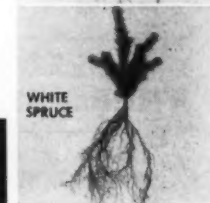
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Since its invention in 1888 by Ebenezer Beecher, there has been little change in principle in the match machine. There have been improvements, but the apparatus now in use is essentially that which has been keeping the nation in lights for the past 57 years.

What we laymen call match "sticks" are termed "splints" by the industry and these are either square as is customary with some safety matches or roughly round as in kitchen matches.

These splints starting as blocks of wood at the cutting head of the machine, are ejected from the other end of the machine an hour later after a series of sprays and dips which have made them into matches. A total of 32 ingredients are in the match head. The splints are carried over successive dipping operations and then over an extended series of wheels in order to dry the match heads.

In the case of square splint matches, a different technique is employed in that the wood cannot be fed directly to the match machine in block form. In place of white pine, aspen is generally used, the splints first being prepared by a peeling or veneering machine. Barked and trimmed aspen logs are fed into the machine where they revolve against a horizontal planing knife which acts upon the entire length of the log, the knife being adjusted to the thickness of the splint desired. Cutters placed above the planing knife divide the veneers into narrow bands whose width depends upon the length of the match splints. The bands are divided into convenient lengths and superimposed into piles of 50 or more, after which they are cut by a guillotine knife into square splints. The splints are then usually impregnated in a solution containing a fire retardant salt, dried, often cleaned and polished in a tumbling machine, straightened and packed in trays for feeding. They are finally placed in a suitable hopper, jogged and pushed into match plate holes by automatic plunger devices, and proceed on their way through the dipping and drying cycle in similar manner to the round splint matches previously described. Use of square

splint matches has been confined principally to the safety or strike-on-box variety which are packed in small cardboard or wooden boxes, the thin strips of wood for the latter being prepared on a veneer-cutting machine similar to that vast majority of all wood splint matches of the round stick variety, however, practically all of the strike-anywhere friction matches and a good percentage of the safety output being of this type.

In order to definitely control drying conditions, it is necessary in the case of wood splint matches to house the drying operations in a specially constructed well-insulated room, and to provide air conditioning and dehumidification machinery for use when outside air is not suitable for efficient drying. The match industry was one of the first to thoroughly examine the possibilities of air conditioning and to utilize it on a large scale.

Air must be introduced into the drying room in a condition sufficiently below the dew point in order to absorb from 20 to 25 pounds of water per million matches per hour, and still contain after the absorption only 4 grains of moisture per cubic foot in order to maintain the 50 percent relative humidity. Maintenance of this humidity is essential. If it were lower, particularly with a rather high, dry bulb temperature, drying of the match heads would be too rapid on the surface, thus upsetting the equilibrium of water vapor absorption from the head and allowing the surface to dry before the interior. Such matches when struck might explode with considerable violence, and scatter particles in all directions. Furthermore, the matches would sweat in the boxes, the surface again becoming wet after moisture equilibrium has been established, which would cause the dangerous condition of sticking matches within the boxes.

Indeed, the match business is an important industry of the forests and will continue to be so.

HAROLD OLSON ADDED TO WESTERN PINE STAFF

Harold Olson, veteran Pacific Northwest newspaperman and forest industry writer, has been appointed to the promotion staff of the Western Pine Association. Well-known throughout the Western Pine and Douglasfir regions of the Northwest, Olson was a district manager for the American Forest Products Industries, Inc. for the past 10 years.



Mr. Frederick



Mr. Connaughton



Mr. Drake



Mr. Nelson



Dr. Schmitz

AFA Elects Five Members to Board

Karl T. Frederick, a prominent New York attorney and candidate for reelection to the board, led the ticket in The American Forestry Association's recent election of five members of the Board of Directors. The other four members elected were Charles A. Connaughton, George L. Drake, DeWitt Nelson, and Henry Schmitz.

Mr. Frederick has been active in AFA affairs for many years. He has served as a member of the board since 1937, and in 1946 as an active vice president of AFA. A lawyer by profession, Mr. Frederick is presently chairman of the board of the New York State Conservation Council. Besides his interest in AFA, Mr. Frederick's name has long been associated with outstanding conservation organizations such as the National Wildlife Federation, Camp Fire Club of America and the Association for the Protection of the Adirondacks.

Charles A. Connaughton is the California Regional Forester of the U. S. Forest Service. He has been active in forestry since 1928, having served in a variety of positions in forest research, a forest ranger in national forest administration, and regional forester for the Southern Region.

George L. Drake, a consulting forester, is a retired vice president and chief forester for the Simpson Logging Company, which he joined in 1930 after a tour of duty with the Forest Service. He is a former president of the Society of American Foresters, Pacific Logging Congress, and Western Forestry and Conservation Association.

DeWitt Nelson has been active in forestry work for many years and is the Director of Natural Resources for California. He was appointed to that position in 1953 after having served that state as state forester. Mr. Nelson is the newly elected president of the Society of American Foresters.

Dr. Henry Schmitz is the president of the University of Washington. He has devoted many years to the field of forestry education, and was formerly dean of the School of Forestry, University of Minnesota. Dr. Schmitz was also editor-in-chief of the JOURNAL OF FORESTRY.



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Shelterbelts in the USSR

(From page 31)

and also the fact that forest shelterbelts are planted to protect not an individual farmer's land and property, but a large geographic area counted in hundreds of thousand square miles, and at the expense of the central government. For an economist, the most intriguing part of this project is its cost in men and material and its effect upon other branches and factors in the national economy of the USSR.

At this early stage it is not possible to undertake an evaluation of the project with all of its economic ramifications. Neither is it possible to spell out whether or not social and economic gains from this project to the country in a five-year plan period would be commensurate with expenditures of economic factors, or whether the latter could have been used in some other productive enterprise more fruitfully. Moreover, the physical phenomena which largely control returns from investment in agriculture are mostly variable factors. At most what could be said in economic justification of the project is that it is a very high premium insurance over a short period of time, but which may be justified as a socioeconomic investment over many generations.

If this project were undertaken in an entirely free enterprise economy, the immediate effect would reflect in higher prices for goods and services induced by higher taxes and/or borrowing and consequent inflation. In the USSR, however, for that matter probably in any socialist commonwealth, expenditures for the general consumption of goods and services is likely to decline. This usually depends on the alternative use of public funds—including capital equipment and trained personnel—two economic factors which are most (normally) readily available, for the similar use in kolkhozes, sovkhoses and leskhozes (forest enterprises), until additional funds, equipment and technicians are available to meet all demand. It has been evident, however, throughout the perusal of the material on the subject that the lack of economic means available was the main reason for the failure to accomplish the assigned tasks more fully.

In the national project, the Soviets have undertaken to plant 8 more or less parallel protective forest belts of varying lengths and widths with an

increasing number of strips in each belt in the northwest-southeast direction—starting with the Belgorod-Don River belt of two strips (each 30m wide and 500km long) and ending with the Vishnevaya (Mountain)-Chkalov, Uralsk-Gurev belt with 6 strips (each 60m wide and 1080km long). The latter apparently would be the main line of protection against the Asiatic winds. These strips in one continuous line would make a forest belt more than 10,000 miles long and a mile wide.

They claim a reasonable success in planting in the Belgorod-Don River, Kamyshin-Stalingrad regions, and in many parts of the Voronezh-Rostov-na-Donu, and Ekaterinovka-Kamensk state protective shelterbelts. Up to 99 percent of the assigned tasks has been completed on these projects. The average accomplishment, however, for the last two belts is estimated between 60 and 70 percent of the plan for the period. But most important of all, the Soviets had gained valuable experience in mobilizing their technical and economic resources for planting state forest belts on a very large scale with the application of new seeds, seedlings and new methods of planting with mechanized equipment which were not used during earlier experimentation.

By 1955, the Russians are expecting to complete plantings in the Belgorod-Don River and Kamyshin-Stalingrad state forest belts, and by 1958, the work is expected to be completed in the general area of Voronezh-Rostov-na-Donu and Penza-Ekaterinovka-Veshenskaya-Kaminsk. In the remaining state shelterbelts of Saratov-Astrakhan, Stalingrad-Stepnoi-Cherkessk, Chapaevsk-Vladimirovka, and Mt. Vishnevaya-Uralsk-Gurev, the plan calls for completion by 1965.

From the time state shelterbelts were initiated until December 1952, kolkhozes, sovkhoses and leskhozes had planted more than 2.6 million hectares of forest belts and built over 12,000 ponds and reservoirs (the plan calls for 40,000 by 1965). By 1954, in UkSSR alone, 674,000 hectares of protective forest belts were planted including 350,000 hectares of state protective forest belts. The latter area appears to be larger than that of the original plan, which called for 320,000 hectares to be planted within the 1949-1955 period.

Of the 570 forest protection stations (LZS) which were supposed to be established to handle the technical aspects of the project, in the first two years, only 172 materialized—56 were already functioning in 1949 and 116 were added in 1950. During those years more than 3,500 tractor operators, firemen, drivers and mechanics were trained for work in LZS. In 1948, there were only 576 tractors in the forest stations, but their number had risen to 2,150 in 1949, more than 5,000 in 1950, and was expected to reach 8,000 in 1951, in addition to automatic combines, tractor plows, cultivators, planters, and an assortment of other forest equipment, including thousands of trucks and cars. At the end of the fifth FYP (1951-1955), their number was expected to be 5 times larger than in the last year of the fourth FYP, that is 25,000 tractors. The same ratio of increase was expected for other equipment. For servicing this equipment, the number of repair shops at the forest stations was being increased to 200, in addition to a hundred other repair shops primarily servicing the logging operations of the forest industry.

From 1949 to 1953, the forest administration nurseries had prepared 18 billion seedlings and 127,000 tons of tree and shrubery seeds, or more than tenfold increase in output from the prewar years. This part of the project seems to have run according to the schedule. In 1952 alone, the nurseries had supplied 5 billion seedlings for immediate planting. Nevertheless they were still short of planting material in Kuibyshev, Chkalov, Stalingrad, Western-Kazakh, Orlov and in some other provinces. Consequently, seedlings and seeds had to be imported from other regions and provinces of RSFSR and UkSSR, thus disturbing local projects and creating competition for men and material.

The idea of forest shelterbelts to enhance agricultural production and conserve soil and water resources has particular significance in connection with the recent decision of the Soviets to raise the output of bread grains in the USSR to 10 billion puds by cultivating the virgin lands in Siberia, Urals, Povolzh'e (Volga Region) and particularly in Kazakhstan. It has been planned to utilize these regions by 1956, by planting with grains, not less than 28 to 30 million hectares of virgin lands. (These are idle lands, a part of the chernozem-blacksoil-belt, stretching from the Romanian border in the west to the Pacific in the east). In

fact, the machine tractor stations (MTS) and sovkhoses of Kazakhstan, chiefly in the area between Rubtsovsk and Semipalatinsk, 8 million hectares, had already been plowed up by the planting season of this year, an area larger by 1.7 million hectares than contemplated by the plan. Furthermore, in the same general area where the danger of drought conditions and dust storms are ever present, grain production would hardly be expected to survive over many years without special conservation efforts. Fifteen million hectares have already been distributed to kolkhozes, sovkhoses and for other productive purposes, so that any measure that would protect soil and conserve available moisture would greatly contribute to raising larger crops.

In Kazakhstan strong winds in the winter and summer, alternately create snow and dust storms (white and black storms). Therefore, unless plowing of virgin lands for cultivation of grains is concurrently accompanied by conservation measures, they might become in a few years a dust bowl, a condition which would be much more difficult to rectify later. This has been realized—but inadequately—and the Russians have been using strips of sunflower, mustard-green, corn and copra in grain fields; and strips of wild grass and virgin soil left untouched in grass fields. Late in 1930's however, a beginning was made with forest shelterbelts. In fact, it is asserted that the survival of grain production in some parts of Kazakhstan may be dependent on a speedy planting of forest belts.

The Russians claim that they have had more than twenty years of shelterbelt planting experience in this republic and have already planted some 58,000 hectares, including 53,000 hectares by kolkhozes, half of it in the postwar period. Of these, 30,000 hectares have survived with very favorable results for crop yields and soil and water conservation. By close observation and study, it has been shown since 1948, that in the Kazakhstan fields protected by forest shelterbelts grain yields have been 35 to 300 percent higher than yields in the open fields.

In Semipalatinsk region, the area recently visited by the American farm delegation, where plantings were started in 1937, the earliest have reached a height of 16 to 17 meters. The yield in protected fields in 1948, was 18.5 quintals of oats per hectare; and in unprotected fields,

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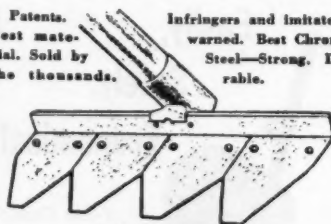
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they were a total loss in the same year. In one instance, in 1950, a kolkhoz produced 74 percent more crops in protected fields than in unprotected, and in 1953, 54 percent more.

All in all, it is proposed to plant in Kazakhstan, 500,000 hectares in forest shelterbelts and of these 150,000 hectares in the immediate 5 years. The truth is that in the physical conditions of Kazakhstan (where virgin lands are available for cultivation), the planting of trees should have preceded the cultivation of land under grains or else the dust bowls similar to those in trans-Volga region or even in the American Middle West will not be long in appearing.

In conclusion, it may be said that the Soviets have noticeably cooled-off in their enthusiasm for the Stalin's plan "for amelioration and modification of nature," and conservation projects have become more or less a routine part of the agriculture. They have transferred a great deal of their attention in this section of the national economy to other giant economic projects—such as, the exploitation of the virgin lands for new food supplies in Siberia and Kazakhstan. Incidentally, these projects would be practical-

ly in direct competition for men and material and other economic means used in the promotion of the regional shelterbelts in the southeast of RSFSR, which happens to be located in a contiguous general area of the east. It may also be that they have decided to achieve the protection of agriculture via more practical but piecemeal method of protecting individual farm fields and orchards, or even large size agricultural projects in the form of gigantic sovkhoses, as in Kazakhstan, where tangible results may be had in a shorter time. The Russians may have concluded that to make the state protective shelterbelts really effective on a regional scale would require several generations, and that it is reckless to invest so many economic means in a project from which the returns may not be forthcoming immediately or in the near future. There is no reason to believe that they have lost faith in the ultimate economic or technical efficacy of this project. It is rather that they have reached a conclusion that their present day policy requires a larger share of the national product and savings be allocated for consumption and/or for projects which would increase the amount of consumers' goods immediately or in the near future.

DeVoto Was An Artist

(From page 4)

attitude of many college professors in regard to DeVoto's own interpretation of American history. I did get him to admit, in our conversations, and later in print, that "it was better that there were half a million family houses in Iowa than that the forests of northern Wisconsin should still stand." The numbers of houses built of Wisconsin lumber were, of course, infinitely more than the figure he used, yet I was glad for the concession. He granted readily that the Moguls of Industry had "converted the uncivilized public heritage into public wealth of which their take in profits was an inconsiderable decimal." Yet he was "mad at them" all the same.

Benny DeVoto's heart was in the right place, even though emotions sometimes clouded his thinking. There is no conservationist like a fresh convert. Converts will carry the banner at the head of the parade where the shooting may be most deadly. Benny was never scared of shooting. His courage was great. His

knowledge of today's lumber industry and forestry was both faulty and fragmentary.

His passionate love was the United States. When so many of his generation took off for Europe, there to deplore and sneer at their native land, DeVoto stayed home to defend it. He could no more be a Fellow Traveler than he could be an oratorical Patriot of the star-spangled sort. I could wish we had more Americans like him.

Perhaps I liked the man too well to judge his achievements with the proper objectivity. But I would say that Bernard DeVoto was a slashing pamphleteer, an expert reporter, an outstanding historian. I fancy that his trilogy of the West, beginning with *The Year of Decision*, will be read a century hence as one of the great works about the United States. It is a monument of which any writer could be proud. It will remain a monument far beyond our time because it is the work of a superb artist.

Timber Hearings in the Northwest

(From page 35)

asked for the funds it needs, "though Congress has worked hard, and with some success, to give them enough." The BLM and Indian Bureau, he said, "have suffered equally under the tight budget policy of this administration."

Gravest threat to the fullest growing of timber is failure of natural reseedling on large areas of cutover and burned-over lands. On O & C lands replanting has been far short of needs, BLM Area Administrator James F. Doyle told the congressmen.

O & C cutting has been averaging 24,000 acres a year, and on nearly all of this it would be good economics to replant or reseed immediately, he said. This, plus 100,000 acres of old non-restocked burns and cutover, urgently calls for a much expanded reforestation job, he added.

The 12 O & C master marketing units were by turns praised and pilloried. BLM set up these districts to foster communities by restricting primary manufacture of logs to their originating areas. They show signs of crumbling before mounting opposition, or at least undergoing changes.

The Albany and Dallas sections of Oregon defended their stabilizing influence, while the Astoria area, which was frozen out entirely, roundly attacked them. Ex-Governor Sprague called for abolition of the marketing districts.

The congressional subcommittee devoted many hours to the Smith river problem. A \$6,500,000 road system soon will open up the largest block of wind and bug damaged timber in the region, and an estimated 800 million feet of dead and adjacent green timber will be taken out in the next five years.

Most of this is in one marketing district on the Oregon's south coast. But the Eugene and Roseburg districts have put up such a fight to get in on this rich new timber source, the Interior Department has authorized BLM to suspend boundaries where it would clearly aid salvage.

Proposed sustained yield units on national forests seemed to have more foes than friends. Three proposals for Wind River, Hood River and Molalla units have been rejected in the past couple of years.

When the Bureau of Indian Af-

fairs took its turn at the whipping post, predominant criticism was that timber was being sold too far below that of the other agencies. Its foresters maintained that, considering quality of timber and lack of roads, prices were nearly competitive.

No one appeared satisfied with the Interior Department's plan to turn over the Klamath reservation with its 4 billion feet of merchantable timber to the tribe. Industry feared the big stand would be dumped on the market within three years.

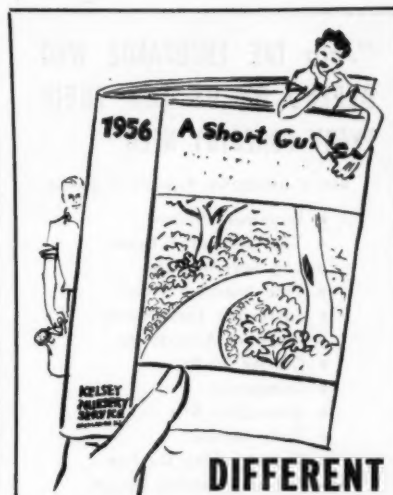
Many witnesses urged amendments to Public Law 587, largely to slow up the reservation's liquidation. Lumbermen are watching the Klamath development, as it may provide a pattern for liquidating other Indian holdings.

Warm Springs Indians, whose reservation also lies just east of the Cascade mountains in Oregon, complained they were being overcharged about 100 per cent, or \$60,000 a year, for administrative services. This results from a 10 per cent take-out, which the Interior Secretary could change at any time, they reported.

The investigating congressmen represented the Senate Interior and House Government Operations Committees. Many of the problems they found would elicit the same remark as that made by Representative Chudoff on changing the O & C marketing districts:

"Until somebody has guts enough to take a stand, you will always have the problem. Whoever does it is going to lose some friends."

by Merlin Blais



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Arizona on the Warpath

(From page 39)

The only visible opposition has been expressed by the National Lumber Manufacturers Association. This organization has established a firm policy of opposition on principle to any additions to federal land ownership, regardless of the individual merits of the case. This policy it has refused to modify in spite of urgent requests from some of its Arizona members that an exception be made for the Aztec lands.

The NLMA has proposed six alternatives to federal purchase of the Aztec lands. Four of these suggestions involved methods of avoiding the administrative difficulties that would inevitably arise due to the checkerboard pattern of the land. These suggestions are workable if it can be assumed that a private owner would be interested in practicing any type of sustained yield forestry. In view of the low productivity of the land this is highly doubtful. The other two alternatives have to do with acquisition of the land by the state of Arizona. The idea of state ownership of the Aztec lands has attracted considerable favor in Arizona. However, it is the opinion of all who have studied the question that constitutional and financial problems make purchase by the state impossible.

The announced policy of the present administration is to oppose the addition of more land to the national forests. Due to the peculiar conditions involved in the Aztec case, the administration has relaxed its opposition.

It is impossible to predict what a private owner of the Aztec lands will do. All the evidence indicated that any purchaser would be forced to liquidate the timber and then let the despoiled land revert to the counties or to the federal government. It is possible to predict what the Forest Service will do if the land is left under its jurisdiction. It will be managed with the objectives of sustained yield, watershed protection, and economic stability of forest-dependent regions. Perhaps the most significant point of this whole controversy is that Arizonans today recognize these benefits of public ownership of forest lands, and believe that return of the Aztec lands to the national forests is in the national interest.

by Charles F. Cooper

Flory "Man of Year" In South Carolina



South Carolina
greener as result
of efforts of State
Forester Flory
award declares

SELECTION of State Forester Charles H. Flory, of South Carolina, as Man of the Year in Service to South Carolina Agriculture was announced this month by The Progressive Farmer magazine.

"Greener and more valuable woodlands cover South Carolina as a result of 11 years of enthusiastic improvements led by State Forester Charles Henry Flory and members of his Commission," says the announcement in the current issue of the magazine.

Each year since 1937 The Progressive Farmer has honored men "whose devotion and contributions to agriculture have gone far beyond the line of duty."

A native of Pennsylvania and a graduate of the Pennsylvania State Forestry School, Mr. Flory went to North Carolina as a young man in 1925 and has worked in forestry in North and South Carolina ever since. For the past 11 years Mr. Flory has served as South Carolina state forester.

One of the far-reaching accomplishments in South Carolina forestry was enactment by the 1945 General Assembly of a bill providing for state-wide forest fire protection for all forest lands in the state. South Carolina was the first southern state, and the second state in the entire South, to take this progressive step. At present, only three southern states have reached this objective.

Under Mr. Flory's administration, the Commission inaugurated a program of providing forest management advice to some 1,000 landowners each year, upped tree planting activities from less than two million to nearly 35 million seedlings a year, and increased the number of state parks from 17 to 22. Attendance at these parks has increased from 500,000 a year to more than three million.



By MERLIN BLAIS

NEED MORE INTENSIVE COOPERATION between federal forestry agencies on one side and state and private timber managers on the other side was the main thesis of the 46th annual conference of the Western Forestry & Conservation Association in Portland last month. For fire and insect control, research and advisory work among small owners, speakers urged continued federal support along with a greater say by the states on operations.

ASSISTANT SECRETARY OF AGRICULTURE ERWIN L. PETERSON told the more than 500 attending from five western states and British Columbia that the administration's basic purpose is "to achieve the maximum possible amount of cooperation." Significant is the fact that efficient forestry agencies exist in 44 states. They have raised a question as to extent of federal financial participation in fire protection, pointing out there are still 49 million acres of forest land without any organized protection, and an additional 135 million with less than adequate protection.

"THERE ARE NO GENERAL ACCEPTED CRITERIA upon which may be measured the level of federal support in fire protection, tree production and management assistance," said Peterson, a former agricultural director for Oregon. These must be developed, though it must be realized the federal treasury is not inexhaustible. "As the public increasingly recognizes the need to conserve and use wisely our soil, forests and water, it is too often assumed that only government can do the job, usually meaning federal government," he noted. "Particularly in forestry, private industry has demonstrated it has both the interest and capacity to practice conservation. The states are demonstrating capabilities—and local government is more responsive to people's needs, with less overhead."

UNCLE SAM'S ROLE IN FORESTRY also concerned the president of the National Association of State Foresters, A. D. Nutting, who is Maine's forest commissioner. The state forestry agency should administer fire control programs on local, state and private lands, with federal responsibility recognized through allotments to the states. The public has an obligation because it demands use of forest lands for recreation, said Nutting. Technical aid in growing and marketing timber seems to be the logical approach to the key problem of small woodland ownerships, said the pine tree state forester. This needs expansion, but federal funds should be allotted only where most of the farm forester's service is devoted to management. Nutting advised pest detection and control should be administered by the state, assisted by federal funds. Producing planting stock also should be a state job, where stock is used for forests, windbreaks and shelterbelts.

INSECT CONTROL SHOULD BE FINANCED ON A CONTINUING BASIS, like fire control, instead of piecemeal, epidemic by epidemic, urged John B. Woods Jr., consulting forester of Salem, Ore. Pest control requires the same organization as fire control: a good detection system, a force of trained personnel and suitable equipment, and sorely needed research. It calls for legislation similar to the Clarke-McNary Act, plus annual assessments and emergency funds, said Woods.

A COOPERATIVE FIRE PLAN COVERING ABOUT TWO MILLION ACRES of forest area in Jackson county of southern Oregon gets fast action, reported L. L. Simpson, Medford.

(Turn to next page)

The plan took shape in 1952, and has about 50 operator members. Key is the agreement each cooperator will pay his own crew for 12 hours of fighting time in the first 48 hours of fire. This saves money for the small gyppo logger. A cooperative two-way radio system has 35 members and 85 mobile units.

CLARKE-McNARY APPROPRIATIONS FOR FIRE PROTECTION under section 2 of the act are not a subsidy and should be continued, said Bernard L. Orell, Weyerhaeuser Sales, St. Paul, Minn. Present allotment is \$10,000,000, half the authorization. Orell suggested the U.S. contribution be held to 25%, compared to the 50% maximum under the law, and that state and private agencies put up 75%. This would put federal funds for fire control on non-federal timber between 9 and 11.5 million dollars. "Fires respect no boundaries, and many are started by the public. Federal participation is an honest recognition of respectability." The act's sections on reforestation and extension forest education come in the realm of subsidies, however, Orell claimed. They should be continued as long as they provide incentives, then the states should take over these tasks.

CREATION OF A FIRE PREVENTION AND CONTROL DISTRICT of 235 million acres of public domain land in Alaska was asked in one of the conference's resolutions. Fires destroy one billion board feet of timber every year in that vast area, besides damaging watersheds, soil, recreation, mining, transportation and wildlife. The western lumbermen branded congressional funds "grossly inadequate," and referred to a recent study by Alaskan foresters and fire control officers urging that \$1,500,000 is needed annually to set up a protection organization.

ONLY 10 TO 25% OF LOGGED LAND IN THE DOUGLASFIR REGION needed hand planting or seeding, estimated H. G. McWilliams, of the British Columbia Forest Service, Victoria. But the species obtained by natural reforestation may not be the most suitable for the next rotation cut. Well stocked lands in British Columbia have primarily western red cedar or not enough Douglasfir. "It may be cheaper to clear cut and plant, rather than wait for natural reseeding, where a certain kind of tree and short rotations are desired by a manufacturing plant," McWilliams commented. Aerial seeding may be the answer in some areas, but cost of tree seed has been going up. It has not worked out for ponderosa pine, which must be hand planted. Another speaker, George Schroeder, assistant chief forester for Crown Zellerbach, Portland, declared restocking problems have about halved in recent years because of better logging practices and fire protection. On the 15 to 20% of logged land which the company must restock it plants two-year-old Douglasfir, grand fir, noble fir and Sitka spruce.

IN THE PONDEROSA PINE COUNTRY FORESTERS ARE TOO COMPLACENT about restocking, accused Dahl J. Kirkpatrick, of the Forest Service at Albuquerque, N. M. Advance reproduction usually present in pine stands deserves better protection. Natural fill-in from seed throw of remaining trees is slow and results in "wavy" seedlings. But direct seeding, and also planting of nursery stock, have been disappointing. Considerable research is under way. Kirkpatrick reported some promising developments, such as treating seed with rodent repellents, improving site preparation by furrowing, eliminating brush and scalping grass, using superior planting stock and selecting the best planting season.

AS VILLAINS, DISEASES ARE TO BLAME for over 10% of the mortality in western forests and about 65% of all growth losses, estimated F. H. Raymond, California state forester, Sacramento. Annual growth loss equals 22% of the 19.7 billion board feet of lumber produced in 1952, or loss of \$64.5 million in values. Heart rots account for nearly half the growth impact losses. Root diseases, in Douglasfir and pine, are the worst killers. More basic research is urgently needed, and should expand to a \$6 million a year outlay by 1978, he urged. But progress against white pine blister rust was related by Conrad P. Wessela, of U.S. Forest Service, Portland. Control methods are being used, including herbicides, hand eradication crews and contractors. Some cutting practices help control, others hinder it. Resource managers have been shying away from white pine, which means a poor job is being done to tell them control is effective and within the profit margin under certain conditions.

Why Not Timber Cooperatives in the South

(From page 16)

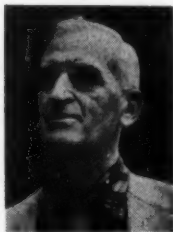
turned to him, and the expenses of the association are provided by a fixed commission or brokerage charge. There are numerous requirements for membership in these farm cooperatives, such as: (1) by financial contributions either in the form of stock, the payment of annual dues, or the deduction of capital returns from the proceeds of the sale of products; (2) contract or membership agreement; (3) membership in general farm organizations; and (4) other requirements. The members usually have voting privileges according to their financial investment in the organization.

One of the more active Forestry Cooperatives, which is in Connecticut, and is now ten years old, is made up of the following types of membership: (1) participating members and (2) voting members, who may be identical. The producers of forest products must make their sales through the corporation in order to become participating members. Participating membership automatically lapses if for two consecutive calendar years the member does not make any sale through the organization. Voting members are those who have subscribed for stock by consent of the managers. Each voting member is entitled to only one vote. Annual meetings are held within six weeks after the close of the year's business. There are two elected officers, the President and Treasurer, who may hold office for one year. There is also a Board of Managers that consists of these two officers and the directors. They manage the cooperative, subject to instructions from the voting members. These officers serve without pay but are compensated for their actual expenses. Regular meetings of the Board are held at such times as they may determine. This Board appoints, from its own membership, a Vice-President, Secretary, Assistant Secretary, Assistant Treasurer and other officers whom they deem advisable. The Board also appoints the Manager and/or Forester and such other employees as the cooperative may require and determines their rates of pay and terms of their working contracts. Subscribers for stock must be approved by the Board before their subscriptions are accepted and the subscribers admitted as voting members of the corporation. No stock may be sold by a stockholder without first offering a thirty-day option to the corporation

for purchase at its par value. At the close of the fiscal year twenty per cent of the net profits of the corporation are set aside as a sinking fund until a sufficient sum has been accumulated to equal twenty per cent of the subscribed capital stock. After this sinking fund of twenty per cent has been accumulated the Board of Managers may declare out of any profits a dividend on the outstanding stock not to exceed six per cent per annum. Any net profits above this 20% sinking fund and dividends to the stockholders can be distributed to the participating members as a patronage dividend in proportion to the business handled for them in the course of the year. This cooperative charges a commission on purely commercial transactions, which fee is less than most brokerage agents receive for their services. During the past three years this commission has averaged between 12 and 15%. To

timber owners the charge is only 5%, the other consideration being that the owner must cut his timber according to sound forestry practices as prescribed by the cooperative. These timber owners who cooperate with the organization become the participating members without a vote. However, they receive a dividend after the required profit has been earned in any one year, provided this profit is over and above the necessary reserve fund as called for. This cooperative "pools" much of the products of its members, which procedure enables the corporation to secure contracts with larger manufacturers and therefore give possibly greater benefits to the members. This organization began with a capital investment of approximately \$3,000, some of which was subscribed as stock at \$10 a share. This initial investment is now in excess of \$15,000.

Emanuel Fritz Wins Western Forestry Award



EMANUEL FRITZ ("Mr. Redwood"), Consulting Forester for the California Redwood Association and Professor of Forestry, Emeritus, School of Forestry, University of California, was presented with the 1955 Annual Western Forestry Award at the closing session of the Forty-Sixth Annual Forestry Conference of the Western Forestry and Conservation Association in Portland on December 9. The handsome plaque, designating Professor Fritz as an outstanding leader in the field of forestry, is awarded each year in "recognition of distinguished achievement in the field of forestry."

Emanuel Fritz was Professor of Forestry at the University of California from 1919 to 1954 and has served as Consulting Forester for the California Redwood Association since 1934. He holds degrees from Cornell University and Yale University and is a Fellow of the Society of American Foresters and a member of Sigma Xi (National Honorary Society) and Xi Sigma Pi (National Forestry Honorary Society). In 1935, he organized the Redwood Logging Conference, which became the Redwood Region Logging Conference, of which he is Executive-Secretary, in 1948. He has served as Consultant to the Department of Interior on forestry matters and as secretary of the California Joint Legislative Committee on Forestry. Professor Fritz has been an editor of the JOURNAL OF FORESTRY and was active in the organization of California Alumni Foresters and for years has served as the editor of their publication. He was an early member of the Save-the-Redwoods League and has served for years as one of their counselors. He served in the U. S. Army during World War I as a Captain of artillery attached to an aviation unit.

"In the redwood industry, Professor Fritz occupies a unique position—for he is the only man who so thoroughly enjoys the confidence of both oldtimer and newcomer that his position as spokesman for the entire region on matters of forestry has never been challenged," according to the nomination for the award, which was signed by leaders in the redwood industry.

Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected AMERICAN FORESTS will pay \$10



Photo submitted by Edward C. Cordon, Baton Rouge, Louisiana

Loblolly pine growing near Shreveport, Louisiana, is about 20 feet in diameter below the first crook, but is actually larger above the second crook. Local residents believe it is an old Indian trail marker formed by the Caddo Indians in that area.



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Packed with power, the new Homelite Model 5-20 Chain Saw brings down big trees six feet in diameter, cuts through 20" trees in 20 seconds without forcing or jamming. Anyone can operate it... no experience necessary.



Never before has there been a chain saw with so much power per pound as the new Homelite Model 5-20. It has 5 big horsepower for faster cutting... a light, light 20 pounds for easy operation. What's more, it is the only chain saw that gives you a choice of attachments to do many different cutting chores easier.

The new Homelite Model 5-20 is precision built for quick starting, dependable performance, and low, low maintenance. Cuts in any position... it saves both time and money... brings bigger profits to woodcutting or clearing operations. Write for complete details or see your Homelite dealer.

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Interchangeable Blades add versatility to the new Homelite 5-20 Chain Saw. For felling, bucking, limbing or plunge cutting, there's a hard track blade for every requirement. Straight blades available from 14" to 60", bow saws 14" and 18".

Bucking is easier on man and saw when a Homelite 5-20 goes to work. Takes less time than ever before. The 5-20 stands up under the grind on any job... job after job.

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How T. M. Lacy keeps road-building cost down

He uses a CAT* D6 Tractor with No. 6A Bulldozer. Average production: ½ mile or more road per 10-hour day in going like this

You're looking at typical terrain on an 8000-acre tract near Charleston, S. C., where T. M. Lacy is contract logging under government controls. He takes out 40,000 bd. ft. a day, about two-thirds saw timber and the rest pulpwood. Here he's using this D6 with No. 6A Bulldozer to build a road for tractors and trucks. The rig averages ½ mile or more road a 10-hour day. It works 5 days a week, all year round.

"I bought this D6 because of the oil-type clutch," Mr. Lacy says. "I studied the specifications and decided that this is the type of clutch we need. I have two other D6s—you can't beat a D6 for logging. It's very well balanced and fast."

Bigger Production with Oil Clutch

Reports from job after job show that Caterpillar's exclusive oil clutch reduces costs and steps up production. It saves you money, trouble and time two ways: (1) Clutch adjustment, while easily done, is seldom re-

quired. (2) Plate replacement is normally necessary no more often than engine overhaul. Another plus: the clutch provides easier shifting for the operator, an important factor in stepping up production particularly on bulldozing jobs. In fact, the tougher the job, the better the oil clutch shows to your advantage.

The oil clutch is standard on all D6s. It is just one of many features that make the D6 a standout on *any* woods job. Your Caterpillar Dealer, nearby for service and information, will be glad to demonstrate.

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